ENGINEERING and MINING JOURNAL.

VOL. XXVI., No. 24.

RICHARD P. ROTHWELL, C. E., M. E., } Editors.
ROSSITER W. RAYMOND, Ph. D., }

NOTE.—Communications relative to the editorial management should be addressed to Mr. ROTHWELL, P. O. Box 4404, New York. Articles written by Mr. RAYMOND will be signed thus *

THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
27 Park Place, New York.

CONTENTS.

EDITORIALS :	PAGE.
The Miniature Edition	415
A Sharper Caught	415
Personals	415
New Publications	415
Books Received	416
The Influence of Silicon on Cast-Steel.	416
Experiments with a Coal-Cutting Machine at Polnisch-Ostrau	417
Aniline-Black	418
The Electric Light	418
The Manufacture of Drain-Pipe	419
The Ammonia Process of Soda Manufacture	420
Large Orders for Mining Machinery	420
An Elevated Railroad in Philadelphia.	420
Bodie, California	420
Leadville	421
Electric Notes	421
General Mining News	422
NEW PATENTS	423
PROPOSALS	423
NOTES :	
The Nickel-Plating Patents	422
French Statistics for 1878	422
Volatilization of Arsenious Acid	422
Elimination of Phosphorus from Molten Iron	422
Smoke-Burning Furnace	422
Mars' Satellites	422
Another Fruitless Cruise for the Pole	422
STATISTICS OF COAL PRODUCTION	424
COAL TRADE REVIEW	424
FREIGHTS	425
IRON MARKET REVIEW	425
METALS	426
BULLION MARKET	426
Salt Lake Ore and Metal Market	427
FINANCIAL :	
New York Stocks	427
Miscellaneous Stocks and Quotations	427
Philadelphia Stocks	427
Gas Stocks	427
Copper Stocks	428
Gold and Silver Stocks	428

THE MINIATURE EDITION OF THE ENGINEERING AND MINING JOURNAL.

This beautiful edition of the JOURNAL will be made a "holiday" number, to appear on the 21st of December. The marked appreciation of our efforts to secure wider and better markets for American products, and to make known the resources and advantages this country presents, is very gratifying, and shows that our business men are moving forward with intelligence and the spirit to develop all the resources that are within their reach. The business of the country is improving, and energetic and far-seeing men are preparing to float in on the rising tide.

A SHARPER CAUGHT.

The Secretary of the Institute of Mining Engineers has a wide influence, which we are happy to see is exercised with judgment. A recent instance gives a good illustration. A very well-informed and gentlemanly person visited Easton the other day, representing himself to be LOUIS RAMEL, the superintendent of certain important silver mines in Peru, and engaged in purchasing large quantities of machinery, rails, and other supplies for that enterprise. His references were unexceptionable, and the letters which he bore justified the Secretary in giving him a general letter of introduction to members of the Institute. In a day or two, however, it was discovered that Mr. LOUIS RAMEL was either a knave or a lunatic, or both; that he had ordered unlimited quantities of supplies from a large number of leading houses, paying for them in advance of delivery with drafts which were returned protested. No deliveries having been made, the victims were in no case the losers, except by the abundant courtesies which they had extended to a guest so rare in these days as a heavy cash customer. Hence, in each instance, they seem to have taken the matter as a "sell" in the non-mercantile sense, and not to have cared to make themselves conspicuously the butts of the joke by sending the police after the joker. He, meanwhile, pursued his conquering way, carrying with him an ever-increasing collection of letters from respectable houses and receipted bills showing his large *bona-fide* transactions with them. If he had been content with this modest style of life, he might have continued indefinitely to be dined and escorted about, passing to a new field of operations every two or three days. But in obtaining a general letter from the Secretary of the Institute, he overshot his mark. This was too valuable a piece of plunder to be retained without a sharp pursuit. Professor DROWN issued a private circular to members east of the Mississippi, narrating the circumstances; and, within a day or two, received from a member in an interior city of Pennsylvania a dispatch, saying that his man was there, buying things as usual, and doubtless receiving with grace (though on this head the telegram was silent) the hospitality of the vendors. A detective from Easton soon overhauled the gentlemanly adventurer. He now sits in jail, reflecting that the Secretary's wide acquaintance has a double edge. He has made a full confession (probably too full to be true) of his exploits as a purchaser, has written some stories and poems, and invented a new motor to wile away the time, and conducts himself with airy cheerfulness, as still the guest of somebody, though in this case it is the county that is giving him board and lodging. Meanwhile, the Secretary sleeps sweetly o' nights, and the members, thanks to his vigorous action, are not exposed to the little games of peripatetic pretenders, bearing with them as a key to unlock all doors and hearts and pocketbooks, a writing with the irresistible signature of DROWN. *

PERSONALS.

Our readers are invited to send us items for this column.

Mr. E. GYBBON SPILSBURY, Mining Engineer, has recently been engaged in opening a very promising lead vein near Lubec, Me. The vein at a depth of 300 feet is nearly eight feet wide, composed of galena and blende, containing a moderate amount of silver. The reports given are very favorable. The workings of the mine run out under the sea.

Only a few days now remain for advertisers to prepare their cards for insertion in the Miniature Edition of the ENGINEERING AND MINING JOURNAL. This edition will be the finest ever issued, and will be distributed throughout the entire civilized world. Manufacturers and dealers have never had a better opportunity for making known their business.

IMITATION IS THE SINCEREST FLATTERY.—Every one has become familiar with the striking card which Messrs. FRASER & CHALMERS, of Chicago, have had in our advertising columns for years, and nearly every one knows that this enterprising firm has, by producing machinery of the very best quality, and by making this known through these columns, built up a very large and profitable business.

It can not be wondered at, therefore, that other manufacturers should imitate, as far as they can, the apparent means which have produced this gratifying result. Messrs. GATES & SCOVILLE, of Chicago, have among our advertisements a card that so closely resembles that of Messrs. FRASER & CHALMERS, as to attract attention, and we have had inquiries from other manufacturers proposing to insert a card "just like FRAZER & CHALMERS'"—a very flattering testimony to the excellence of this company's machinery. We will be highly pleased to welcome to our columns a dozen new advertisers who wish to imitate our old patrons in the style of their "ads.," and—especially if they do so in the promptness with which these settle their bills; but we would suggest that it is a good deal easier to imitate the style of their advertisement than the quality of their machinery, and we have only to hope Messrs. GATES & SCOVILLE will succeed as well in the latter as they have done in the former. Let them make as good machinery, and keep on advertising it in the pages of the ENGINEERING AND MINING JOURNAL, and the same satisfactory results will follow in every case, whatever the form of their "cards."

NEW PUBLICATIONS.

THE GEOLOGIST'S TRAVELING HAND-BOOK. *An American Geological Railway Guide, giving the Geological Formation at Every Railway Station, with Notes on Interesting Places on the Routes, and a Description of Each of the Formations. By* JAMES MACFARLANE, Ph.D., *Author of "The Coal Regions of America," and one of the Commissioners of the Second Geological Survey of Pennsylvania, with the Coöperation of the State Geologists, and Other Scientific Gentlemen.* New York: D. Appleton & Co. 1879. (Price, $1.50. For sale by the Scientific Publishing Co., New York.)

The candid and careful reviewer of a book attempts first to place himself at the stand-point of the author, and to comprehend the plan and purpose of the work. After that, he examines the execution of the plan, to judge whether the purpose has been worthily accomplished. In the case before us, it is worth while to separate these two inquiries, in order that the praise which the book merits under both heads may be discriminatingly bestowed. The merit of the conception belongs to Mr. MACFARLANE alone. The merit of the execution he shares with a goodly company of distinguished co-laborers. The result of this happy combination is one of the most useful hand-books ever offered, either to the general or to the scientific public.

The best proof of the value and timeliness of any new idea is the voluntary tribute of the general exclamation of wonder that nobody has thought of it before. The announcement of this book, preceding its publication, aroused this feeling at once. Mr. MACFARLANE aptly illustrates it, in its application to non-professional people, as follows.

"In these railway journeys no person who has the least power of observation can fail to notice the peculiarities in the scenery and the great variety in the formations of rock to be seen in the railway cuts, and cropping out on the hill-sides. If we always had a professor of geology for our traveling companion, we would be glad to learn from him what these various formations of rock are, what place they occupy in the series of strata that are visible on the earth's surface, and their mineral and other productions; also at what other localities the rocks occur, and whether they are entirely new to us, or the same we have seen elsewhere. This work is a substitute for the supposed traveling professor of geology, giving in a small space the names of the geological formations which occur along the lines of the railroads; and in another part of the book is to be found a plain but full description of each of them."

Without disparaging the imaginary professor, we take leave to say that the book is a good deal better than a substitute for him. No geologist is equally familiar with all parts of the country; and no geologist, stopping at a railway station or looking out of a car-window in a region he has not specially studied, can undertake to identify on the instant the rock formations which meet his eye.

Mr. MACFARLANE'S Hand-Book is really a substitute for a whole corps of geologists, stationed along the route of the traveler, and each having his own beat, and relieving his predecessor when the boundary of his district is passed. But even that arrangement, were it otherwise practicable, would have its drawbacks. Eminent professors might be too "full of the subject," and talk too much and too learnedly, and not be satisfied

with simply answering questions. You can not pop a professor into your bag, pull him out for a minute's chat, and put him back again when you want to take a nap. Professors are not to be shut up that way. For a great many reasons, in short, the average layman will prefer the book.

But we fancy that the professors themselves will find it equally indispensable. The more one knows of geology, the more significant and interesting become the brief hints and descriptions here given. Mr. MACFARLANE is quite justified in his statement that no geologist should make an excursion over new ground without this guide. "It is a scientific catalogue of the great panorama that passes with its ever-shifting scenery before the eyes of the American railway traveler, and even an artist finds a catalogue of a picture-gallery very necessary."

Moreover, the recent and accurate character of the information here given lends it a special value. The State Geologist of each State, or some scientific authority best acquainted with its local geology, has revised the list of stations and formations. "Without a single exception," says the compiler, "and with characteristic devotion to the cause of science, this aid has been very cheerfully and promptly rendered, and, in not a few instances, where the necessary information was only in the knowledge of these gentlemen, they have filled in the geology from original sources not yet published."

The difficulty and labor involved in the preparation of the book must have been very great; and the manner in which the results of so much work have been compressed into a volume of 216 pp., not too large for the purpose in view, while at the same time the facts are given clearly and fully, deserves high praise. The first quarter of this volume is occupied with tables and descriptions of the formations. Prof. DANA'S classification is adopted as a basis; and the various groups, as given by him, are numbered for reference. The classifications of HUNT, ROGERS, LESLEY, etc., are also given; and, indeed, the local geology of each State is described in the terms preferred by the special authority for that State; but every thing is referred, by appending the appropriate numbers, back to the table of DANA. The moot points are thus very neatly avoided, for the most part. As Mr. MACFARLANE says, "Whether the Oriskany sandstone should be placed at the base of the Devonian or at the top of the Silurian; whether Hudson River, Loraine, Nashville, or Cincinnati is the best name for that formation; and whether Cambrian should include one, or all, or none, of the Lower Silurian formations, and similar questions, seem of less importance to the ordinary reader, for whom the descriptions are intended, than to the professional geologist."

The remainder of the book is occupied with the railway-tables, giving the names and distances of stations, and opposite to each, the name of the formation exposed. Abundant foot-notes add suggestions, descriptions, and explanations, where the general reference would be insufficient.

The high authority of the statements of the book will appear on inspection of the following list of gentlemen who have assisted in the preparation of different parts of it: Canada, Prof. T. STERRY HUNT; New England, Prof. C. H. HITCHCOCK; New Jersey, Prof. JOHN C. SMOCK; Pennsylvania, Prof. J. P. LESLEY; Ohio, Prof. J. S. NEWBERRY; Michigan, Prof. ALEXANDER WINCHELL; Illinois, Prof. A. H. WORTHEN; Wisconsin, Profs. T. C. CHAMBERLIN, R. D. IRVING and M. STRONG; Minnesota, Prof. N. H. WINCHELL; Iowa, Dr. C. A. WHITE; Missouri, Prof. G. C. BROADHEAD; Kansas, Prof. B. F. MUDGE; Colorado and Nebraska, Prof. F. V. HAYDEN; Wyoming, Utah, and Nevada, Mr. ARNOLD HAGUE; California, Dr. J. G. COOPER; Washington and Oregon, Prof. THOMAS CONDON; Delaware, Maryland, and the District of Columbia, Prof. P. R. UHLER; Virginia and West Virginia, Profs. W. B. ROGERS and J. J. STEVENSON and Mr. W. M. FONTAINE; North and South Carolina, Prof. W. C. KERR; Georgia, Dr. GEO. LITTLE; Kentucky, Profs. N. S. SHALER and Mr. JOHN R. PROCTER; Tennessee, Prof. JAS. M. SAFFORD; Alabama, Profs. EUGENE A. SMITH and WM. GESNER; Louisiana, Prof. F. V. HOPKINS; Arkansas, Prof. RICHARD OWEN. The important State of New York has been treated by Mr. MACFARLANE himself, with valuable aid from Prof. JAMES HALL. *

ANNUAL REPORT OF THE COMPTROLLER OF THE CURRENCY *to the Third Session of the Forty-fifth Congress of the United States.* Washington, 1878.

Mr. KNOX'S annual reports are universally recognized as singularly clear, compact, and forcible public documents. The present one contains, besides the usual statistical information, a full discussion of the national banking system, and a strong defense of the banks against the reckless assaults of that motley crowd of politicians which changes its watchword at every election, crying out at one time for the cheap silver dollar, at another time for inflation of the currency, now against resumption and now against the national banks. One after another, these watchwords have become stale and odious. The silver dollar is a nuisance; it has been discovered that inflation does not inflate; resumption is so near that it can not be defeated; and nothing is left but the warfare on the banks. We welcome the conflict, because we have repeatedly seen how a thorough discussion enlightens the people, and how surely the people, when thus enlightened, take the right side. The facts and reasonings of the Comptroller of the Currency will give to political debaters, from the village store to the Senate Chamber, the means of replying to those plausible but sophistical arguments with which our excellent banking system is assailed. The case may be stated in a nutshell. The issue of further legal tender notes by the government would be unconstitutional. Hence the national bank notes, if abolished, would have to be replaced with non-legal-tender Treasury notes, or with bank notes under State laws. The former would be highly objectionable, as making two classes of government paper, and as leaving the volume of paper at the discretion of Congress. The latter would be a return to the wretched condition from which the National system delivered us—a system of State monopolies, regulated by the caprices of thirty odd legislatures. The National banks are not monopolies. The State banks often were so. Meanwhile the Comptroller shows just what are the burdens and privileges of the National banks, and precisely what price is paid by the people for the advantages of a safe and uniform system. A national bank, based on 4 per cent bonds, profits by its circulation, under the most favorable circumstances (that is, when it loans its available circulation continuously at 8 per cent), about 1·43 per cent per annum on its capital. But the average State tax upon a national bank is 2 per cent; so that the circulation is a source of loss rather than gain. All these facts are well enough known to business men; and the one overwhelming proof of them is found in the circumstance that the banks do not multiply, although there is no restriction in the law as to their number. That can not be a very outrageously valuable privilege which when offered freely to the public finds so few takers. *

BOOKS RECEIVED

ANNOUNCEMENT.—The Scientific Publishing Company will forward, postage paid, at publisher's price, any book in the market. Orders will be filled for works in general literature, as well as for those of a scientific character. Address, Scientific Publishing Company, 27 Park Place, New York. P. O. Box 4404.

(Titles to which a * is prefixed will be mailed, postage paid, on receipt of price.)

A History of the Growth of the Steam-Engine. By Robert H. Thurston, A.M., C.E. New York: D. Appleton & Co. 1878. 12mo, cloth, 490 pages. (*No Index.*) Price, $2.50.

Annual Report of the Board of Regents of the Smithsonian Institution, for the year 1877. Washington, 1878. 8vo, 500 pages.

Digest of the Law of Mines and Minerals and of all Controversies incident to the subject-matter of Mining, comprising the Cases in the English and American Reports, from the Year Books to the Present Time. By R. S. Morrison, of the Colorado Bar. San Francisco: A. L. Bancroft & Co. 1878. 8vo, law sheep, 448 pages.

Digest of Nevada Reports, and Sawyer's Circuit Court Reports, etc. With a Table of Cases Cited, Criticised, Commented upon, Affirmed, and Overruled. By Hon. Thomas P. Hawley, Chief Justice of the State of Nevada. San Francisco: A. L. Bancroft & Co. 1878. 8vo, law sheep, 444 pages.

Interest Tables in use by the Mutual Life Insurance Company of New York, for the Calculation of Interest and Prices of Stocks and Bonds for Investment. By William H. C. Bartlett, LL.D., Actuary of the Company. New York: Mutual Life Insurance Company. 1878. 4to, 43 pages. (*No paging, no Index.*)

Coal and Iron in all Countries of the World. Compiled from Official Sources and with the Assistance of Eminent Living Authorities. By Joh. Pechar, Railway Director in Teplitz, Bohemia. Manchester and London, 1878. (Paris International Exhibition, 1878. Authorized English Edition.) 8vo, 223 pages. (*No Index.*)

**A Manual of the Mechanics of Engineering and of the Construction of Machines*, etc., etc. By Dr. Phil. Julius Weisbach. In Three Volumes. Vol. II. Section II.—Application of Mechanics to Machines. Part II.—Heat, Steam, and Steam-Engines. 500 Wood-cuts in the Text. Translated from the Fourth German Edition by A. Jay Du Bois, Ph.D. With Additions showing American Practice. By R. H. Buel, C.E. Authorized Translation. New York: John Wiley & Sons, Publishers. 1878. 8vo, cloth, 559 pages. Price, $6.

Statistical Sketch of South Australia. By Josiah Boothby. Published by Authority of the Government of South Australia. London, 1876. 8vo, 86 pages; map. (*No Index.*)

The Silver Wing Mines of Colorado, U.S.A. San Juan County. La Plata Mining District. Report of J. T. Drew, Esq., Prof. P. H. Van Diest, Prof. E. B. Sherman. Burlington, Vt., 1878. Folio. View of the Mines and Maps.

THE INFLUENCE OF SILICON ON CAST-STEEL.

By M. Pourcel, of Terre Noire.

The following note was communicated to the Société de l'Industrie Minérale, at the September meeting: "The writer begged to recall the attention of members to the subject of cast-steels, homogeneous and free from blow-holes, which was discussed at considerable length at one of the Paris meetings, when different opinions were advanced as to the advantages and disadvantages of obtaining these steels, more particularly with reference to quality, either by mechanical or chemical means. In the first place, if the gas is prevented from escaping from the steel, and consequently the blow-hole from forming, we shut up the wolf in the sheepfold—so M. Grüner affirms (*on enferme le loup dans la bergerie*)—which is certainly a disadvantage. But does this disadvantage really exist? The wolf is the oxygen, or rather the carbonic acid, and when a bath of steel has been previously deoxidized by the addition of sufficient manganese, and the perfect malleability of the metal, when hot, has been assured before casting, by means of test samples, it may be taken for granted that it no longer contains oxide of iron, except the merest trace. But nevertheless, at the moment of solidification, the steel gives off carbonic-oxide gas; and whether this gas exists in solution, or whether it arises from the intermolecular reaction of the carbide of iron of the steel on the oxide of

iron, which is formed during the action of casting, it is not less the cause of the silvery-blow holes so frequently met with in blocks of steel."

The theory of these reactions put forward by the writer at the November meeting, 1876, was based on most carefully observed facts, and no new fact has come to light up to the present time to contradict it. Whatever mechanical means may be employed to prevent the formation of the blow-hole in the mass of steel at the moment of its solidification, if the metal has been deoxidized before casting, and contains an excess of ·2 per cent to ·5 per cent of manganese, it is certain that the quality will in no way be altered, and that the result will be most satisfactory. In the second place, another opinion, advanced by Mr. Vicaire, gives the preference to mechanical action over every chemical reaction, as the former introduces no foreign element into the steel. Mr. Vicaire is of opinion, for instance, that the silicide of manganese added as the chemical reagent to prevent the formation of blow-holes, affects the qualities of the metal, by leaving in it a foreign element, namely, silicon, although in very small proportions, say ·2 per cent to ·3 per cent. In this case, let us examine to what extent the metal is affected—if at all. The writer sets aside the possibility of obtaining practically a metal free from silicon, a question of considerable interest, and upon which he touched in speaking of the "influence of the nature of the pots used in the manufacture of cast (crucible) steel, on the chemical composition of the steel," at the July meeting, 1877. It may be mentioned:

(1) That the best brands of English tool steel, made in crucibles from cemented Swedish iron, rarely contain less than ·1 per cent silicon, and generally from ·1 per cent to ·3 per cent. (2) That Krupp's cast-steel, according to to the analyses of M. Boussingault, contains a remarkable quantity of silicon, ·3 per cent to ·5 per cent; and (3) that French cast-steels in no wise vary in this respect from similar English steels; and lastly, that the metal which for so long was considered the ideal of steel, was never free from silicon.

We have, therefore, only to examine whether two steels, differing only in their chemical composition by one or two thousandths of silicon, really show any wide difference in their physical and mechanical qualities. All the experiments that have been made in various quarters to determine the action of silicon in steel have led to the same conclusion, namely, "that it plays the part of carbon, although less energetically." Swedish chemists agree on this point, and Mr. Akerman, whose opinion is highly valued in Sweden, considers that, in order to obtain steel of the mildest description, the silicon as well as the carbon should be eliminated. The writer also holds this view. Only traces of silicon are allowed to remain in plate-steel manufactured at Terre Noire. An examination of "Experiments on the Qualities of Plates," published by the "Jernkotoret" of Stockholm, will show that Terre Noire Siemens-Martin steel plate contains: Carbon, 0·20 per cent; silicon, 0·025 per cent; phosphorus, 0·08 per cent; manganese, 0·235 per cent; and sulphur, 0·02.

The action of silicon may be classed with that of the hardening constituents of steel—carbon and manganese; but, compared to that of carbon, its influence is slight. Professor Mrazek, whose work on the subject has been published in the *Bulletin de l'Industrie Minérale*, concludes from his experiments that, as far as manipulation in the hot state is concerned, the effect of silicon is three or four times less than that of carbon; and, similarly, Mr. Mussy states in a communication to the *Bulletin* that ingots had been manufactured at his works containing as much as 2 per cent silicon, but little carbon and manganese, and had undergone, without difficulty, the necessary hammering and rolling for plates and similar articles. The writer must, however, express surprise at Mr. Mussy's statement that the steel in question contained but little manganese: he can hardly understand how a cast metal containing 1 per cent of silicon only, even with very little carbon, can stand the work of the hammer, unless it contains ·6 to ·8 per cent of manganese.

Assuredly a metal containing 2 per cent of carbon would act very differently. Consequently, under ordinary circumstances, when the percentage of carbon permits of easy manipulation when hot, that is, when this percentage of carbon remains between ·7 per cent to ·9 per cent, or even 1 per cent, the presence of an additional ·1 per cent or ·2 per cent of silicon can not affect to any extent the malleability of the metal in the hot state.

But is there any necessity for examining the behavior in the hot state of a metal destined for the production of castings which have to undergo no hammering, but simply finishing in the lathe or planing machine? It appears rather that the question should be confined to determining whether the presence of silicon within the specified limits of ·2 per cent or ·3 per cent influences the mechanical properties of the metal, its resistance to shock, tensile strain, crushing strain, etc. Professor Mrazek, who has made experiments to determine the tenacity of the metal cold, admits that $\frac{4}{10}$ per cent of silicon do not diminish the tenacity more than $\frac{1}{10}$ per cent of carbon. Among the thousands of tests for tensile strains and resistance to shock made at Terre Noire on cast steels containing at least ·1 per cent of silicon, and at most ·4 per cent, one fact has been established, namely, that two steels containing equal quantities or nearly so of carbon, manganese, and phosphorus, both being equally pure, and differing only by ·1 per cent to ·3 per cent of silicon, give mechanical results differing but slightly. That containing most silicon shows rather less elongation but higher tensile strain, and behaves as if it were slightly more carburized. Without attempting to fix an exact law, it has been observed that the increase of tensile strain given by ·1 per cent of carbon amounts to 6 kilos per square millimeter on the average, while the increase due to ·1 per cent silicon scarcely exceeds 1 kilo, and that the difference in resistance to shock is scarcely appreciable with variations of ·1 per cent to ·3 per cent of silicon.

It remains to be examined whether the properties of annealing and tempering are influenced by the presence of silicon. The researches of Colonel Caron on the behavior of silicon in steels has proved the property of this body to displace, at a red heat, the carbon from its combination with iron.

Colonel Caron has come to the conclusion that in steels containing silicon—he does not say how much—the carbon, after several heatings, passes into the graphitic form, and that the metal, consequently, loses the property of tempering.

Silicon, as shown by Mrazek, affects the tempering property but very slightly; its influence, in this respect, as compared with carbon and manganese, is hardly appreciable. This is a very favorable property, and entirely precludes the fear of the metal being rendered fragile on tempering by the incorporation of a few thousandths of silicon. As regards the effect of silicon in diminishing the tempering properties of the steel after repeated heatings, its influence might, no doubt, be injurious in tool steel.

A tool will lose its hardness more or less rapidly in its work, and one of the chief qualities of tool steel is the faculty which permits of its being tempered and softened almost indefinitely. But this objection almost vanishes when we come to consider the steel required for castings of large dimensions, which require no hammering. It is a matter of slight importance that this metal should have a tendency to lose its tempering power after a certain number of heatings; besides, the proof of this tendency is still wanting.

In fact, it must be borne in mind that the conclusions arrived at by Colonel Caron were deduced from a limited number of tests made on a particular metal where carbon and silicon were incorporated alone in the presence of each other, in the absence of manganese. Now, in steel castings of large size, manganese is always present, and its presence modifies the tendency of silicon to diminish the amount of carbon combined with the iron. The writer adduces, as an instance, a pig-iron containing 3 per cent silicon, 2 per cent carbon, and ·1 per cent to ·2 per cent manganese, which showed a gray fracture with the carbon in the graphitic state, and a sudden cooling failed to effect the solution of the carbon. Cast into an iron mold, it took no chill. As soon, however, as the amount of manganese is increased, the effect of the silicon is partly neutralized, and when the proportion of these two bodies is that of the equivalents $\frac{Mn}{Si}$, the gray specks in the fracture disappear and it becomes perfectly white. As a rule, pig-iron containing silicon and manganese in the specified proportions takes chill "in proportion to the percentage of carbon," as an ordinary pig-iron free from these bodies. If the same observation be applied to the case of steel, it will be readily understood why a metal containing at the same time silicon and manganese, in definite proportion, may show results differing from those obtained by Colonel Caron, and may acquire by tempering all the qualities of superior metal.

As regards the proportion of manganese to be left in the steel, it will vary from ·2 per cent to ·5 per cent for ·01 per cent to ·35 per cent of silicon. This law is equally applicable to phosphorus. A good idea of the changes of grain of solid cast steels under the influence of tempering, may be obtained from the fractures exhibited in the Terre Noire Pavilion at the Exhibition; the detailed catalogue of each sample gives all the figures of the results obtained from mechanical tests before and after tempering, as well as the chemical composition.

We may, therefore, reasonably conclude that the presence of silicon to the extent of ·1 per cent to ·3 per cent in solid cast steel obtained by chemical reaction, affects neither its physical nor mechanical qualities. Recourse must be had to infinitely small quantities (*faire valoir des infiniments petits*) to determine the difference existing between this steel, and steel obtained without the addition of silicide of manganese by any mechanical process whatever.

EXPERIMENTS WITH A COAL-CUTTING MACHINE AT POLNISCH-OSTRAU.*

By J. Mayer.

The author, in the earlier part of this memoir, reviews the construction of, and results obtained by, various systems of coal-cutting apparatus adopted in other places, before proceeding to describe the machine experimented upon, which is a modification of that by Hurd and Simpson, constructed by Slanek and Reska. The seam worked is 2·29 to 2·46 feet thick, and has a dip varying from 11° to 17°, the coal is hard but rather brittle, making a good deal of slack. The average work of a good collier holing in this seam is from 1·8 square yards to 2·15 square yards per shift of eight hours. The machine has a cutting wheel of 3 feet 9 inches diameter, driven at seven revolutions per minute, by a pair of engines 6 inches in diameter and 12 inches stroke, making 120 revolutions per minute, under a pressure of air of four atmospheres at the compressor, which corresponds to about 7 H.P. The cut is from 31½ to 39 inches deep, about 3 inches high, and was originally intended to be carried forward at a speed of 11 inches per minute, but the hardness of the coal has necessitated a diminution of speed to 7·8 or 9·8 inches per minute. At the latter rate the surface cut per hour would be 9·68 square yards, or, for the whole shift of eight hours, 77·4 square yards. This can not, of course, be realized in practice, the maximum result, supposing the machine to be continuously at work, being from 36 to 48 square yards, or a quantity equal to the work of from sixteen to twenty-five men. The cost of the two methods, deduced from the results of cutting 358·8 square yards, the seam yielding 225 tons of coal, was—

	s.	d.	
By the machine	2	8$\frac{3}{16}$	per ton.
" hand labor	2	9$\frac{1}{8}$	"

The first amount includes a sinking fund charge of £3 per week on £1000, the cost of the compressor being taken at £400, the machine at £400, and the air pipes at £200, the annual work being put at 10,200 tons. The cost of laying out a working face for the machine for a length of 328 yards rather more than counterbalances the small saving as compared with hand labor; but the actual profit is, according to the author, to be derived from the increased amount of large coal obtained, which was about 10 per cent, and on a final balancing of figures the advantage gained by the machine appeared to be about 3½d. per ton. With this there is a considerable saving in the quantity of labor required, three hundred and eighty-five shifts being employed for all purposes when the coal is cut by hand, and two hundred and seventy-two when cut by machine, or a saving of 30 per cent. If, however, the work employed in actual coal-cutting is alone considered, the saving is about 60 per cent.

In a general review of the results, the author points out that as the advantage of machine cutting is chiefly realized by a reduction in the amount of slack made, it is only in thin and hard seams that any great

*Abstract of a paper in the *Oesterreichische Zeitschrift für Berg- und Hüttenwesen*, vol. xxv., pp. 461, 471-488, 498, 506. From the Proceedings of the Institution of Civil Engineers of London, edited by James Forrest, Secretary.

saving is to be looked for, and it is precisely those seams that are least workable and must be abandoned in a season of low prices. A good roof and tolerably uniform dip are also necessary, and as these desiderata can not always be obtained, the use of machines of this kind must necessarily be restricted. A lighter class of machine (that described weighs 35 cwt.) suited for short lengths of face, and available for use in pillar workings, would probably be more useful, even though capable of doing less work in a given time than those at present in use. The other extreme of making excessively light machines to be worked by hand should, however, be avoided, as the power required for holing in coal, even along short lines of face, is too considerable to allow of manual power machines being successful in practice.

ANILINE-BLACK.

By Henri Kinsbourg and William H. Greene.

The characters of aniline-black are entirely different from those presented by the other aniline colors. Its generation, formation, and resistance to the most active chemical agents give to it a place apart among aniline derivatives. Therefore, its study has attracted the attention of chemists and specialists for a longer time than the more simple colors, and much more labor has been devoted to its investigation.

In order to understand the peculiarities of aniline-black, we must rapidly consider its history, from its discovery to the present time.

In 1860, Fritshe and Hoffmann both reported that, on adding a suitable oxidizing agent to a salt of aniline, an abundant precipitate of a deep indigo-blue color was obtained. After this reaction became known, the researches of chemists were directed to the discovery of a method by which it could be utilized for the coloration of textile fabrics. It was necessary that the oxidation should take place in the substance of the tissues.

Such was the condition of the question when Lightfoot found the means of applying the reaction to calico-printing. The first difficulty was overcome, it is true, and a new era was opened in the printing of vegetable fabrics in black. The discovery was gladly hailed by manufacturers, but great difficulties were still to be overcome; for to-day, eighteen years after the discovery of the color, it can be confidently stated that its application has not yet reached the highest degree of perfection, since chemists still labor assiduously for its improvement, and controversies still arise at almost every step.

Why could not Lightfoot's black be successfully employed? It would be useless to give the details of this process here; they are well known. It is sufficient to state that the too acid composition attacks the textile fibers, and also injures the printing-machinery. When the new color was about to be abandoned on account of these faults, the able chemist Lauth announced that he had partly remedied the difficulties by replacing the cupric chloride, employed by Lightfoot, by cupric sulphide. Since then, Koechlin, Rosenstiehl, Cordillot, Higgins, Paraf, etc., and especially, we believe, the competition among calico-printers for the production of the best color, have brought aniline-black into general employment in printing at the present day. We may, however, add that, according to the process which is employed, the black forms more or less rapidly, becomes greenish more or less slowly by the action of light or mineral acids, and the tissues are more or less attacked according to the acidity of the color. We may even state that there is no practical process now in use which overcomes all of these difficulties simultaneously, and, therefore, notwithstanding the numerous researches of which it has been the object, the application of aniline-black to calico-printing still demands improvements.

The black being employed in printing, chemists and dyers sought to apply it in dyeing. It is only a few years since vegetable fibers have been dyed with aniline-black in Europe, and even now they can not be so dyed in all of their various conditions. The dyeing of woven tissues presents difficulties that some of the most reputable chemists have pronounced "insurmountable."

By the earliest processes, the dyeing was conducted in closed vessels, and the cottons were afterward exposed in oxidation chambers; for by this method the dye gave not a black, but a green color, that was converted into black in the oxidation chambers. These processes were only employed in particular cases, and became in no manner general, for they were not practicable and too expensive. Since then, cotton yarns have been successfully dyed with aniline-black by other processes. A salt of aniline is generally employed; by some the dyeing is conducted in the cold; others by the aid of heat. Some require only one bath; others require several. As oxidizing agent, some use the chlorates; others the chromates. Some authors pretend that the presence of copper is essential to the formation of aniline-black; others state that iron is necessary. We can say confidently that the black can be produced without the presence of either iron or copper; we may even add that, in certain processes, these metals would rather interfere with the formation of the black. However, this is a question for scientific discussion, which has not prevented the employment of the dye in practice.

This black, once formed upon cotton, is splendid from all points of view; but, unfortunately, it becomes green more or less rapidly under the influence of sunlight, and by the action of mineral acids. Naturally, each has had his own idea for the correction of this fault: some would prevent it by alkalies; others by the use of particular aniline salts. The imagination of inventors has even gone so far as to recommend a nitro-sulpho-hydro-chlorate of aniline. Others have announced as efficacious the passage of the dyed fabric through a bath of potassium dichromate and a salt of iron, heated to boiling. We can not discuss here the effectiveness of these methods; but we believe that the change to green of aniline-black is caused by an insufficient oxidation of the aniline, and that the remedy consists in a complete oxidation. For the support of this idea, we may state the fact that matters dyed by certain of these processes, and subsequently passed through a simple dichromate solution, never become green; and we may state further that we have dyed cottons in a properly prepared single bath, without subsequent treatment, and have found no tendency to become green, even by the action of the most concentrated acids.

The black, as finished by the European dyers, has a slightly reddish tone which has become so sought for that the manufacturers prefer it to all others. It is easy to understand this, since the red-black is much more solid than the jet-black and the red tone disappears completely in the manufacture of the cotton, giving place to the finest jet-black. It has been difficult for chemists to impress this point upon the dyers, and the dyers upon the manufacturers; but to-day the aniline-black is acknowledged to be superior to all others in Europe; and when manufacturers recognize generally its valuable properties, the slightly increased cost of its production over that of logwood will be regarded as more than compensated.

The dyeing of woven fabrics presents other difficulties, which may be partially understood when it is remembered to what process the tissues are subjected. On this point, some eminent authors, among whom is Persoz, have declared that the fabrics could only be dyed by separating the aniline salt from its oxidant; indeed, if the substances be used together in dilute solutions, a black is not obtained; in concentrated solutions there is at once a precipitation. Hence the question was rather one of manipulation than of chemistry; and of all the processes thus far devised, there was scarcely one which would dye the fabrics in a sufficiently smooth and uniform manner, and at a sufficiently low price, to render it practicable.

The application of the black to animal fibers is not yet in successful operation, since such fibers act as reducing agents, and the black assumes a greenish-olive tone. When this application becomes practicable, which it will at no distant day, aniline-black will render invaluable service in the dyeing of woolen goods, producing a brilliant, solid, and indestructible color, and will permit of the solution of the difficult problem of dyeing mixed goods in one single operation.

We believe that the dyeing of cotton yarns and tissues by aniline-black has reached perfection, and before long equally good results will be obtained on wool, silk, and mixed goods. The dye is becoming generally known to dyers, and an increased demand for permanent colors will necessitate its universal employment.

THE ELECTRIC LIGHT.

The following *résumé* of the opinions of some of our leading experts and technical contemporaries will show to what a delightful state of uncertainty investments in gas stocks have been brought by the very animated discussion that has been maintained upon the above topic during the past few months.

Prof. Morton, for example, in his late lecture to the members of the Gas-Light Association, refreshed them at first by recounting the failures that had thus far attended every effort to practically introduce electric lighting into private houses like gas; but that he proved to be a Job's comforter is to be inferred from his subsequent cautious statement that he by no means wished it to be inferred that better success could never be attained, and from his concluding references to Mr. Edison's present lines of experimentation, the details of which are still jealously kept secret, and to the highly interesting discovery of Professors Houston and Thomson, relative to the utilization of the so-called "extra current," as very promising directions for experiment. On the whole, however, Prof. Morton is of the opinion that the speedy substitution for gas-light of the electric light for domestic uses is an innovation so radical that it is not to be looked for during the remainder of this century at least.

A well-informed writer in the *Public Ledger* (Philadelphia) expresses the following views upon the several points involved in the successful introduction of electricity for domestic lighting: On the question of cost, he points out that there appears to be yet a wide difference between the theoretical figures and those attained in actual practice. The most reliable statements, he believes, make the cost about twice that of the cheap gas of London, for the same length of street, though the vast superiority in the quality and degree of the illumination is admitted. From the wide diversity of the numerous estimates of cost of the electric lighting systems that have been made public, however, this writer is of opinion that experimenters, projectors, and theorists have not yet got down to the approximate cost of the electric light in sustained practice. On the score of the relative manageability of the old and the new systems, the writer referred to makes some very practical comments. "No means," he says, "have yet been found for turning down the light, when only a small quantity of light is desired, or for turning it on with fuller power when that is thought necessary. We all know how convenient this is with the gas-burner. And again, the gas-burner is always ready for use, and this is not yet the case with the electric lamp or candles. The machine may be out of order, and no carbon candle may be at hand when the supply is burned out. In these respects, the electric light requires somewhat of the attention that the old-fashioned lamp does, as compared with the 'always-ready' character of the gas-burner." The delicacy of the machinery required in the management of the new light, and its dazzling glare, are pointed to as objections that will have to be obviated before the light can be made adaptable for the needs of the household. The hope is expressed that Edison's present line of experimentation may cover and remove the practical objections enumerated in the foregoing. The claims of the "Sawyer-Mann" electric light are also referred to—for which its inventors claim that it has obviated all the objections of the French systems; but these claims, the writer prudently adds, "remain to be confirmed."

Finally, we may present the conclusions reached by that most careful and learned engineer, Mr. Robert Briggs, before one of the leading scientific societies of Great Britain, and which, while it can not aid us in determining how soon we are to look for the consummation, will admit of no doubtful interpretation on the main point of the issue, namely: "Every showing is disastrous to the future of coal-gas in the competition; the advancement of science looks to the overcoming of mechanical difficulties and to the accomplishing of the fullest theoretic results. The absolute economy of electric-lighting, as compared to gas-lighting, is so enormous, that the time can not be far distant when the former must take the latter's place for extensive illumination."

A recent calculation says that the demand for lumber increases in the United States at the rate of 25 per cent per annum. The forests decrease at the rate of 7,000,000 acres a year. The fences alone were valued at $1,800,000,000, and they cost each year $98,000,000.

THE MANUFACTURE OF DRAIN-PIPE.

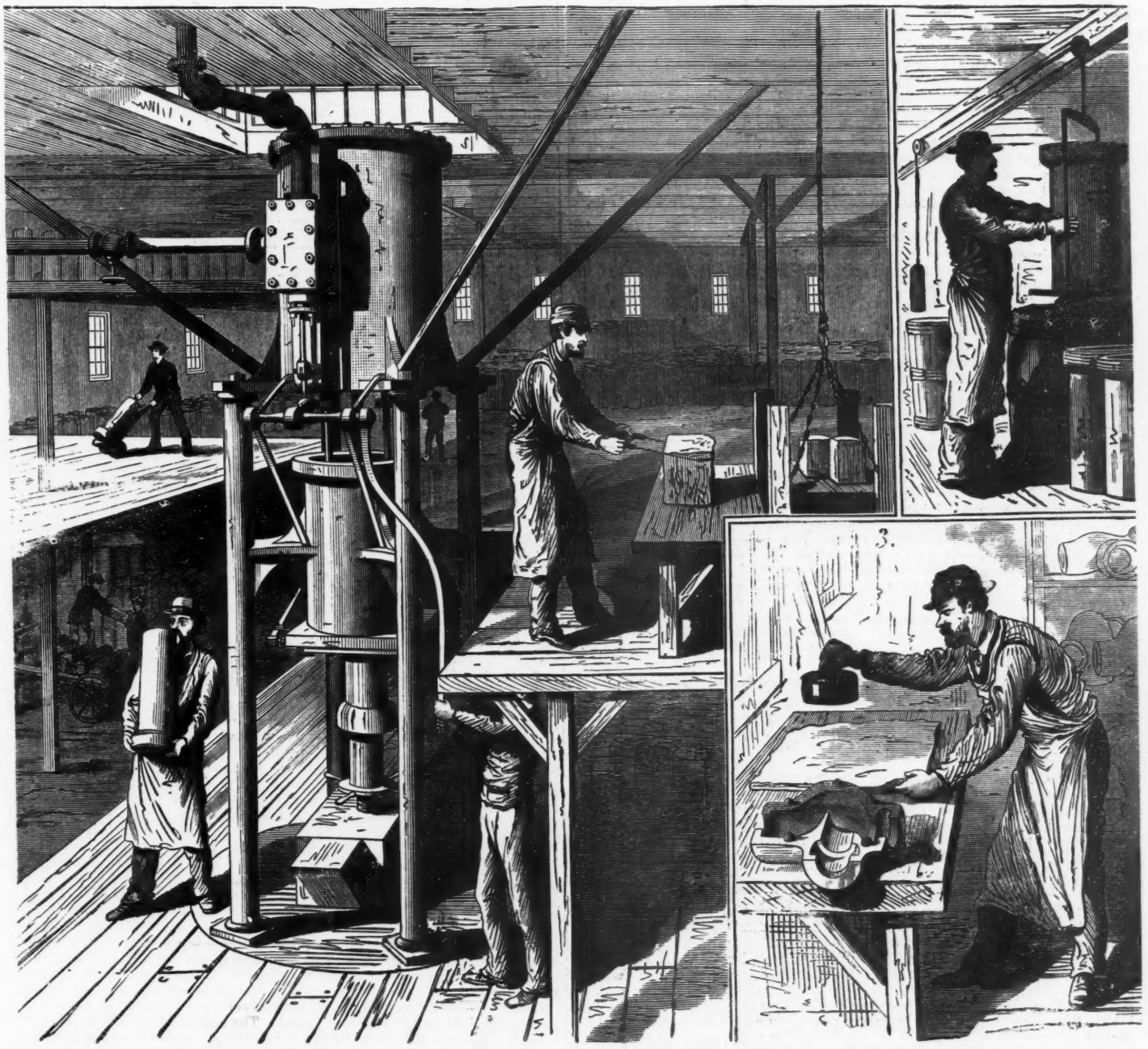
The manufacture of drain pipes is similar in many respects to that of bricks and tiles. It depends little upon manipulative skill, but much upon the thorough intermixing of the material used and the freedom of the same from impurities. The clay used in this vicinity is a refractory potter's or plastic clay containing lime and magnesia, with more or less oxide of iron, either black or red. It comes from the large beds existing near Woodbridge, N. J., and belongs to the series of upper secondary rocks underlying the green sand deposits.

The first process which the material undergoes is tempering with water and mixing in pug-mills in which are spirally-disposed blades, which cut up the mass and at the same time move it forward. It passes through two mills, one horizontal and the other vertical, and is then transported to the press. Before it is placed in the latter, it is wired, that is, taking a good-sized lump a workman cuts it through repeatedly with a wire, and in this way removes all large nodules of iron pyrites, stones, and similar foreign substances. Iron in the clay is the chief difficulty with which potters of every grade have to contend. It obtrudes itself in microscopic specks in fine kaolin, and in lumps as big as an egg in the coarse drain-pipe material. In fine porcelain it produces black spots, which at once reduce the goods to inferior quality, while in drain-pipe it melts, runs, and leaves holes. To extract even the large masses by wiring by hand seems at the present time, when processes infinitely more delicate and complicated are done by machinery, rather behind the age; but we were informed that no other means answers the purpose so well. The clay is tempered so stiff that it is practically impossible to force it through sieves or grating without breaking the latter away, nor does there, for the same reason, seem any apparent way whereby magnets could be advantageously used to extract the iron.

After being wired, the plastic mass is placed in the press, Fig. 1. This consists of a receiving cylinder in which is a follower driven down by the large steam-cylinder above. Through the lower cylinder runs a spindle which supports at its lower end a core. At the bottom of the cylinder are adjustable dies, between which and the core the clay is forced, emerging, as in the case of the lead in the lead pipe manufacture, in tubular form. Before pressing begins, however, a wooden drum is placed upon a platform which may be screwed up and down, and which is located on the bed-block of the press. Sliding on this drum is a core or mold of the exact shape and size of the inside of the enlargement or collar of the pipe. This mold, when the pressing first begins, is brought up close under the cylinder, and a pair of collar-dies are brought around it. The annular space between these dies and the core is closed beneath, so that when the clay is forced it can not descend, but must fill said annular space. This done, the collar-dies are opened and the pressing is continued, the pipe of uniform diameter thus produced sliding gradually down over the drum, as represented in the illustration.

If, however, the pipe is to be curved instead of straight, the guide-drum below is not used; but as soon as the collar is formed, the attendant grasps the pipe as it comes out and bends it to the desired curve by hand. As soon as each section of pipe is thus finished, it is removed and placed upon a rack until thoroughly dry.

The glaze used is ordinary slip with no coloring matter, the clay employed being of such a nature that it will melt without running by the time the material of which the pipe is composed is burned to a body. Dipping in the glazing is done in the case of large pipe by the simple means shown in Fig. 2. The pipe rests on a counterweighted suspended platform, which is easily raised or lowered by hand into or out of the mixture. In making traps and odd shapes from the plastic mass, no press is used, but the clay, cut into slabs, is first hammered into compact condition by hand and then packed in molds, as shown in Fig. 3.



Baking is done in the ordinary way in kilns. No seggars are used, and the pipes are disposed in nests, that is, inside of a 12-inch pipe there is usually placed an 8-inch, and inside of that again a 4-inch. The heat is kept up for from 54 to 56 hours, when the glaze turns to a dark-brownish, glossy hue, and the work is done.

Mr. Walter Gooch, of the Princess's Theater, London, who has purchased the Paris Balloon, is making arrangements to devote it to the same purpose as that to which it has been put in Paris.

THE AMMONIA PROCESS OF SODA MANUFACTURE.

The small importance of the soda industry in this country up to the present time should not cause us to forget the vast extent and importance of its manufacture abroad, whence our supplies of this indispensable chemical agent are drawn.

From the time of the close of the Napoleonic wars that devastated Europe during the opening years of this century, down to the year 1873, the admirable process of Leblanc stood without a rival in the production of soda, by far the most important of the great chemical industries. The prominence of the soda industry, and the excellence of the Leblanc process, which has survived its discoverer without essential alteration for a half-century, no less than the peculiar exigencies of the times which called it into existence, have combined to cause it to be looked upon as the most valuable as well as the most interesting of industrial processes.

It was not until the year above named (1873) that a process was brought to public notice, that gave promise of any serious rivalry with that of Leblanc. But in that year the attention of the industrial world was directed to the fact that a new process of soda manufacture had been for some time in successful operation. This discovery was made at the Vienna Exposition, where M. Salvay, a French manufacturer, exhibited soda products made by what is now generally known as the ammonia process. Though this process had been patented in England as long ago as 1838, and though some commercial samples of soda thus made had been exhibited at the Paris Exhibition in 1867, it was not until the Exhibition of 1873 that M. Salvay's exhibit from his works, producing 250 to 500 hundred-weight daily, or about 80,000 hundred-weight per annum, demonstrated the fact that the process was commercially successful. The process depends on the fact that the bicarbonate of soda is less soluble in water than the chloride of sodium; hence, when a concentrated solution of common salt is saturated simultaneously by ammonia and carbonic acid gases, sodium bicarbonate separates from it. This is the general principle of the operation; its practical success depends entirely upon the details, and especially upon the skill and ingenuity with which the by-products are worked over. In this process, it may be observed, the chief element of success depends upon the regeneration of the ammonia salt employed to effect the precipitation. The resultant of the above-named reaction is bicarbonate of soda and chloride of ammonium. From this last the ammonia is recovered for a second operation by treatment with caustic lime, while the sodium bicarbonate is converted into simple carbonate—the soda of commerce—by heating, the excess of carbonic acid driven off being employed to unite again with the regenerated ammonia.

Such was the interest which the process and exhibit of Salvay excited, that chemists no less eminent than Profs. A. W. Hofmann and Rudolph Wagner declared their belief, in official reports, that the ammonia process was destined at no very distant period to entirely supplant that of Leblanc. Since the time before named, the ammonia process has been slowly but steadily growing, until, at the present time, as we glean from a pamphlet issued by M. Salvay, containing a history of the new industry and its present commercial status, the annual production of soda by the ammonia process has reached 40,000,000 kilograms (1 kil. = 2·2 lbs.), a decided increase over the 4,000,000 kilograms which represent the yearly production in 1873. Of the present yearly production, about one half (or about 20,000,000 kilograms) represent the make of one establishment, the manufactory of VERANGÉVILLE-DOMBASLE (*Meurthe-et-Moselle*), which, when certain additions now in progress are completed, will be by far the largest establishment of the kind in the world. The Belgian works at *Couillet*—the pioneer establishment—have an annual production of about 7,500,000 kilograms.

The product of these several establishments is represented to be almost chemically pure, not caustic, and containing only the merest traces of sulphate of soda and iron. The official analysis of this soda is given below, and a glance at the figures will reveal its extraordinary purity, namely:

	Per cent.
Water	0·147
Silicic acid and carbon	0·053
Chloride of sodium	0·064
Ferric oxide	0·003
Alumina	0·009
Carbonate of lime	0·071
Carbonate of magnesia	0·021
Carbonate of soda	99·632
Total	100·000

It is noted that the almost perfect freedom of the Salvay soda from sulphate of soda and iron renders it specially valuable for glass-making purposes. It is said to be extensively used for this purpose in Belgium, England, and America, while its consumption in France, Italy, Russia, and Denmark is steadily growing. It has been tried with good results in the manufacture of plate-glass, and as a substitute for potash in the production of crystal-glass. It is said to yield a glass of unusual purity. It is said to be used exclusively by the manufacturers of ultra-marine, while for every other use to which Leblanc soda is put, the Salvay soda, by reason of its remarkable purity and its cheapness, is steadily growing in favor. From the remarkable growth of this new industry, therefore, as indicated by the above *résumé* of its most recent statistics, it would appear that Messrs. Hofmann and Wagner were not mistaken in 1873 in their judgment as to its eminent merits.

ANNOUNCEMENT.—The Scientific Publishing Company will forward, postage paid, at publisher's price, any book in the market. Orders will be filled for works in general literature, as well as for those of a scientific character. Address, Scientific Publishing Company, 27 Park Place, New York. P. O. Box 4404.

A new industry to be added to those now located in Mansfield, Mass., is that of the mining and manufacture of ocher. The deposit covers twenty acres, and appears to be of an average depth of three and a half feet. The business is to be prosecuted immediately.

LARGE ORDERS FOR MINING MACHINERY.

The manufacture of mining and milling machinery has become of late years a specialty, carried on by a few well-known firms, East and West, distinct from ordinary foundry and machine business. Every new machine, and each slight improvement on old ones, is watched by the various firms engaged in the business, and adopted as soon as proved successful. By this constant regard for improvement, and through the keen competition now necessary, it has come to pass that almost identical patterns of machinery are in use, both East and West. There has been close figuring on the part of San Francisco and Chicago firms as to supplying the Black Hills machinery, ending in the awarding of one of the largest contracts yet given to the well-known firm of Fraser & Chalmers. The Homestake No. 2 and Deadwood Mining Company have just contracted with the firm above named for two mills. The machinery consists of: Two 60-stamp mills, each of 750-lb. stamps with high mortars. In each mill Tulloch's automatic feeders were used for feeding the stamps, and these were supplied with ore from three No. 5, 15×9, Blake crushers, being one for every twenty stamps. Engines were new style, of 120 horse-power, adjustable cut-off, Corliss frames, each supplied with steam from two tubular steam-boilers, 54 in. diameter, and 16 ft. long, the shipment amounting to some 840,000 pounds. The Homestake No. 1, represented by Messrs. Lounsbery & Haggin, of Broad street, has ordered a complete hoisting-works. These orders are very significant; they are chiefly given by San Francisco capitalists to a Chicago firm, as against the competing noted firms of the West, and given by men who will not tolerate the slightest inferiority of work or material, for the sake of saving a few hundred dollars in freight or first cost.

We are pleased to notice this success of Messrs. Fraser & Chalmers, who have worked hard for many years to bring their machinery to the present point of perfection, and are now known throughout the States, Mexico, and South America. Fraser & Chalmers have supplied all the machinery for the Glendale Smelting Works, La Plata Company at Butte, Penobscot mine, Belmont, and many other of the works of Montana, and are supplying several mines in Virginia and Georgia.

AN ELEVATED RAILROAD IN PHILADELPHIA.

At a recent meeting of the Sub-Committee on Railroads of the Councils of Philadelphia, a resolution was discussed, though without any definite action resulting therefrom, to grant permission to the Pennsylvania Railroad Company to build an elevated railroad on Market street, from the freight depot of the company at Fifteenth street to the Schuylkill. From the consideration which the project received, we glean that the railroad company favors it, Mr. Kneass, its representative, urging that while the completion of such a road would greatly facilitate the local distribution of the freight business along the line, it would not interfere with private interests. The company further proposed to build the proposed elevated road at its own expense, and incidentally to relieve the city of the responsibility attaching to the working of the present city railroad, which, since the removal of the company's freight depot west of Broad street, on account of the erection of the Municipal Building at the intersection of Broad and Market streets, had yielded the city but trifling revenue. The proposal of the company is to occupy about 26 feet of the street, laying their rails on three lateral posts. This arrangement, Mr. Kneass pointed out, was a very different one from that of the New York Elevated road, which occupies the whole street over-head, excepting some fifteen or twenty feet from the house-line. His plan would allow thirty-five feet from the house-line on either side, and the road would not, it was asserted, occupy more of the street than the present railway, which could be allowed to remain for the shipment of way freight to forwarding houses and merchants. The erection and operation of a steam road of the kind proposed, it was also urged, would greatly increase the capacity of the freight depot at Fifteenth and Market streets, greatly increase the company's ability to handle freight, shippers would be saved heavy charges for hauling, freight could be deposited at the height of the elevated road, and passenger traffic at the street level would be relieved of its present serious obstruction by the removal of the freight traffic to the upper road.

No further details of the projected line were brought out at the meeting named, as the members of the committee deemed it prudent not to assume the responsibility of making any recommendation in the premises, but to refer the whole subject to the General Committee of Councils, and in the mean time to invite the business men and property-owners along the line of the proposed road to attend the meeting of the General Committee for the purpose of giving expression to their views as to its desirability.

BODIE, CALIFORNIA.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: In your very valuable edition of the 16th ult. I find an article on Bodie, which I think must have been written by a person who has never visited our growing, thriving mining district, or else by some one who is interested in a certain *part* of the camp.

The principal mines are, in the first place, situated on High Peak Hill, the Summit, Standard, Harrington Consolidated, Bulwer, Belvidere, Consolidated Pacific, and West Pacific mines. These celebrated corporations are at any time dividend-paying ones.

On the mountain beyond, known as Bodie Bluff, are situated the Syndicate, Bodie Chief, Tioga, Bechtel, Sitting Bull, Ida, and Black Hawk mines.

Your correspondent has got these claims by some mistake all situated in the same mountain.

Again, I quote from your correspondent, "From Silver Hill the locations are not so numerous for a distance of about three quarters of a mile to the Queen Bee Hill." On the contrary, the locations are *more* numerous (see Vernon & Goodson's new official map). The tunnel companies can not make "things lively" for the regular companies engaged on ledges, as their claims by recent decisions of the Supreme Court give the tunnel companies but little comfort. With hardly a single exception, all

the companies in the immediate vicinity of tunnels have had cropping ledges from the surface.

There will be no "complicating titles" relative to tunnel companies' claim; for all miners understand that the law is explicit on the subject, and make their claims accordingly. The few (one or two) companies here who have struck blind ledges have, without any trouble or unpleasantness, settled and are busy developing their ledges. As regards the titles here, I consider them more reliable than any I ever seen in any mining district on the coast; in an experience of fourteen years, I have never seen so few conflicting titles.

The views expressed of the Lewis map are correct. The map is simply disgusting to some, while to others it is only ridiculous.

The ledges here are all hard on the surface, consisting of uncrystalline, chalcedonic quartz. At a depth of from seventy to ninety feet, they lose this hardness, and become softer and friable. The ores are frequently so soft as to be easily picked and shoveled in the lower levels, powder being used simply to shatter the ground about the ledge. As depth is attained, rich veins are discovered continually coming into the main ledges as feeders or spurs. I know of no mining district that presents the bright future that ours does. With the many dividend-paying mines, our success is already assured.

Truly yours,
G. R. VERNON, Mining Engineer.

LEADVILLE.

Special Correspondence of the Engineering and Mining Journal.

Two months have gone by since my letter on the production of this camp appeared in the JOURNAL. I have seen nothing which will discredit my estimate of 5000 tons of lead-metal from here, although capacity and output of mines are far above it. The capacity of our furnaces might have furnished a larger quantity, but insufficient water supply and frequent blow-outs and shut-downs, from divers causes, reduced the capacity to one third actual smelting. Aware of the difficulties under which the smelting-works labor and will labor until railroad connection insure more regular supply of coke, etc., and conscious of the changeable average character of the ores, which require the most careful sorting and mixing, I withheld comments thereon, as I foresaw these impediments. They will be overcome. The mines, meanwhile, are put in excellent condition, and the number of new strikes the last four weeks is considerable. I am happy to say that I "struck oil" myself from a little corner on Tabor to many a good square claim. The assertion made by one of our great Leadville miners, "You scientific and literary fellows never strike any thing," nettled me, and I made up my mind to teach him better. You may henceforth count me a Leadville miner. I am preparing an elaborate report, or rather a series of reports, on these mines, their geological and economical condition. I shall commence with them immediately after New Year's. Mr. Carl Henrich, formerly connected with the State Geological Department of Missouri, will assist me. I shall make up for my long silence by a true, honest account of facts, and do not fear the JOURNAL'S critic.

I close this letter with a few items. Fryer Hill retains as yet the lead in public interest; within a month or two, the valuable part of that section will be owned by the great combination troupe—Tabor, Borden, Chaffee, Field, and Leiter, and other performers. They buy out all the small fry. The region between the Crescent-Carbonate mines up to Bald Mountain will then become the point of the greater attraction for speculators, as a good deal of it remains as yet unexplored and unproven. Occasional strikes, meanwhile, keep the interest awake.

The Ten Mile District is much canvassed. I have not examined any mines there as yet, and can say nothing about them.

The establishment of divers new smelting concerns in this place is seriously on the tapis. The more I see of this camp, the more I feel assured that it will become the great smelting-pot for Colorado ores. As a city it grows beyond all expectations. I warrant next summer a population at least equal to that of Denver. Be the climate abominable or not, it is the place to make a good living, and more. To tell the truth, it is the best camp I ever struck.

B.

ELECTRIC NOTES.

ELECTRIC EXPERIMENTS.—For several evenings past, an electric light has been displayed in New York, on Fourteenth street, near Sixth avenue, manufactured by Arnoux & Hockhausen, with the effect of dulling the street gas-jets. The cost of the apparatus is said to be $5000.

"THE LIGHT OF OTHER DAYS."—A few of the citizens of Boston and Salem, Mass., among them ex-Mayor Williams and Mr. George D. Phippen, recollect a parlor in Pearl street which was lighted every evening during the month of July, 1859, by the electric light, and this electric light was subdivided too! This was nineteen years ago, and it was undoubtedly the first private dwelling-house ever lighted by electricity. A galvanic battery of some three dozen six-gallon jars was placed in the cellar of the house, and it furnished the electric current, which was conveyed by suitable conductors to the mantelpiece.

THE BRUSH MACHINE IN A COTTON-MILL.—Mr. Charles F. Brush, inventor of the Brush dynamo-electric machine, has completed and exhibited apparatus for a New England cotton-mill, which gives eighteen lights of two thousand candle-power each, a fourteen-horse engine being used to furnish the power. The lights are claimed to be under perfect control, and not disturbed by accidents to one or more in the circuit. The carbons in each lamp, it is also claimed, cost seventy-two cents, and last eight hours. This is about one sixth the cost per candle-power of the Jablochkoff lights in the streets of Paris, which, however, cost more than the gas-lights they displace.

ADOPTION OF THE ELECTRIC LIGHT.—While the general use of the electric light awaits the time when existing systems, patented or otherwise, shall have commended themselves on the score of economy, excellence of quality in the light, and its manageability, the proprietors of numerous large establishments, particularly of factories, both in this country and Europe (more particularly in France and England), are availing themselves of it; and thus an earnest is afforded of its future extensive utilization. It is one of those innovations which have been widely welcomed at the outset in an anticipatory form, and there is a prevailing confidence that inventive genius will provide that it shall meet all requirements. The municipality of Paris has applied electricity to the lighting of l'Avenue de l'Opera and the Magasins du Louvre, and, apparently stimulated by French readiness to apply even an imperfect system, the Metropolitan Board of Works of London is about to light up the Thames embankment as well as Waterloo Bridge with a flood of electricity. The Paris municipality and the Board of Works will doubtless proceed to rapidly extend operations. It is to Edison the world is looking for the facile, cheap, and convenient means of lighting up private dwellings. Whatever the claims of other systems patented and partially brought out, they are held *sub judice* by municipal and other bodies until his achievements in this line can be brought before the world. The *Times*, of London, yclept the "Thunderer," proves the first journalistic establishment to be lighted with electricity. Our New York *Tribune*, we understand, is proposing to light its composing-room in the same way, and a number of factories in the Eastern States have adopted the Brush machine with the most satisfactory results.

FACTS CONNECTED WITH THE ELECTRIC LIGHT.—At a meeting of the New York Academy of Sciences, held on the 9th inst., Prof. Charles A. Seeley read a paper on the electric light. He observed that the applications of electricity to the useful arts are among the greatest facts of our own times. In 1840, the world began to realize the possession of the arts of electro-metallurgy and electro-telegraphy. The publications which describe the electrical arts would constitute a large library. A single treatise (Du Moncel's) comprises 3000 pages in five octavo volumes.

Sir Humphry Davy, early in this century, exhibited the electric arc; in 1810 he employed for the purpose a galvanic battery of 3000 cells. Since that time it has been familiar to the professors of chemistry and their students at all the large colleges; but it was regarded only as a curious fact or a brilliant illustration of science. Its great cost at first, and the annoyances of its management, did not give a resting-place for the suggestion that it would become a useful light. Probably Davy was also the first to obtain the electric light from incandescent platinum and carbon. In the year 1840 we commenced to have greatly improved generators of electricity, and so electricity came to be cheaper and more manageable. In 1844 the first patent was issued, and that to an American—Mr. Starr. From that year there has been a stream of patents, constantly increasing in volume. The electrical generators have been steadily improved, and the conditions of producing the electrical light are better understood. Electricity is now cheap, and we know how to use it. To-day the solid and permanent success of the electric light is achieved and guaranteed. Experience in its constant use as a light-house beacon extends back fifteen years. It is used and improved for the lighting of streets, theaters, workshops, and mines. It is established also that all the desirable qualities and properties of gas-light are found in the electric light, and that the latter has other desirable qualities in addition. The relative cost of equal quantities of gas-light and electric light will generally determine which shall be used; but there are many cases in which the advantages of electric light are so conspicuous that gas-light will not be thought of.

NOTES.

Out of all the myriad lights in the heavens, the earth is visible only to the Moon, Mars, Mercury and Venus.

The underground cable from Strassburg to Kiel is now working with complete success.

M. Pasteur has received the decoration of a grand officer of the Legion of Honor. Edison and Elisha Gray are made chevaliers.

At the last meeting of the American Gas-Light Association, considerable interest was manifested in the examination of the New Otto Silent Gas Engine.

The jurors of the Paris Exhibition have recognized the claims of Mr. Bell as the inventor of the "Speaking Telephone" by the award of a grand prize.

The opening exercises of the Spring Garden Institute, a newly-organized technological institution of Philadelphia, were recently celebrated with some *éclat*.

The Emperor of Brazil has engaged the services of Mr. W. Milnor Roberts, of Philadelphia, and one of the ablest of American civil engineers, for a term of three years for the improvement of the water highways of the empire.

Messrs. Hoopes & Townsend, of Philadelphia, have obtained a gold medal at the Paris Exhibition, the highest award, and the only one obtained by any bolt, nut, or rivet manufacturer. They report that they are full of orders, and feel encouraged with the present outlook.

The Mexican Minister of Public Works has announced that the Mexican government has decided upon holding an Exhibition in the City of Mexico, at an early day. A commission is to be appointed to organize the project. The exhibition will be under the auspices of the government, and will be confined exclusively to Mexican and American products.

Vegetable ivory is the hardened kernel of the nut of a species of palm, of which there are several kinds. The Brazilian palm (*phytelephas macrocarpus*) grows freely in Central America and Peru, and yields what is known as the corosos nut of commerce. When shipped, the kernels are quite milky and soft, like white wax, and during the voyage they ripen and become hard. The nut is chiefly used for making buttons, and other small articles.

John Stephenson, of New York City, the coach and car builder, is furnishing the outfit for a tramway between Calais and St. Pierre in France, which is being constructed with English capital, and some of the cars are now in course of shipment via Southampton. The capitalists referred to have organized to construct and equip tramways wherever they can obtain certain concessions, and have already built roads on this plan in Swansea, Barcelona and elsewhere.

The mineral produce of the United Kingdom of Great Britain and Ireland in the year 1877 was of the total value of $292,000,000. The foremost

item is that of coal, 134,610,763 tons, of the estimated value of $235,500,000. The iron ore is stated at 16,692,802 tons, of the value of $33,750,000. The total value of metals was $93,715,000. The great item here is 6,608,664 tons of pig-iron, of the value of $80,950,000. There were 501,435 oz. of silver obtained, almost all from lead, of the value of $574,500, and 143 oz. of gold, almost all from Merionethshire, of the value of $3250.

THE NICKEL-PLATING PATENTS.—The suits of the United Nickel Company of New York, lately decided, and now pending in the United States Circuit Court, Blatchford, Judge, are to settle the validity of the patents. There is now a suit in Boston awaiting the decision of Judge Lowell, which will determine whether the Adams patents for nickel plating belong to the United Nickel Company of New York or the National Nickel Plating Association of Boston. In case of a decision adverse to the United Nickel Company, the parties paying royalties to them are again liable to the Boston Company.

FRENCH STATISTICS FOR 1878.—The production of steel in France in the first half of this year was 130,801 tons. The production in the corresponding period of 1877 was 110,494 tons. The production of pig-iron in France in the first half of this year was 766,336 tons, as compared with 763,873 tons in the corresponding period in 1877. Wrought-iron was made in the first half of this year to the extent of 352,348 tons, as compared with 387,337 tons in the corresponding period of 1877. The extraction of coal in France the first half of this year amounted to 8,255,950 tons. The production in the corresponding period of 1877 was 8,091,559 tons.

VOLATILIZATION OF ARSENIOUS ACID.—In chemical treatises there appear contradictory statements concerning the temperature at which arsenious acid gives off vapor. According to Thenard, volatilization begins at a cherry-red heat; according to Berzelius, if heated in open vessels, it softens and begins to sublime at incipient redness. In the *Encyclopédie Chimique* it is said to soften and sublime under an ordinary pressure of 200° C. Wurtz gives the same degree, but without mentioning the softening. According to Watts it begins to sublime at 218° C., and according to Wormley at 190° C. The author finds that it volatilizes at much lower temperatures, especially when assisted by the evaporation of a liquid in which it is contained. Under these circumstances, it is more or less volatile at temperatures ranging from 100° to 150°.

ELIMINATION OF PHOSPHORUS FROM MOLTEN IRON.—A process for eliminating phosphorus from molten iron and steel by the aid of chloride of calcium or other haloid salts of the alkaline earths, has been recently patented by Messrs. H. Schulze-Berge and J. Barnstorf of Oberhausen. Based upon the fact, observed and utilized analytically by Dr. Schönn and Prof. Fresenius, that phosphorus may be separated from its compounds by calcium or magnesium at a red heat, they propose to use the chlorides of these metals, carefully excluding air or any other oxidizing agents, in order to avoid the oxidation of phosphuret of calcium and the subsequent reduction by the iron. They have constructed a special apparatus for carrying out the process, which it is claimed leaves the carbon in the iron unchanged, while silicon and phosphorus are removed.

SMOKE-BURNING FURNACE.—From Cleveland comes the report of a successful smoke-burning furnace, the invention of Dr. S. G. Clark. At the rear of the grate-bars is a small auxiliary furnace with grate and ash-pit. Over this rear furnace is thrown an arch of fire-brick, the base of the arch resting against the bottom of the boiler. The coal is fed in the usual way at the front of the furnace; as the smoke is burned off, the incandescent coal is gradually moved back toward the rear of the grate-bars, where it falls with the cinder into the rear furnace. There sufficient air is admitted to cause a most intense heat immediately under the arch, where all the smoke and gases are instantly decomposed. One of these furnaces is now in successful operation in Newburg, at the Cleveland Steel Casting Works, near the crossing of the A. and G. W. and C. and P. railroads, who claim the saving of coal over the old setting to be 40 per cent.—*Cleveland (Ohio) Trade Review.*

MARS' SATELLITES.—Last year some discussion took place as to the first mention of satellites to Mars. Voltaire was stated to be the originator of the suggestion, but Mr. Proctor claimed the honor for Kepler, and, writing to the *Times* the other day, he gives the passage Kepler wrote in 1610 to Wachenfels: "I am so far from disbelieving the existence of the four circum-Jovial planets that I long for a telescope to anticipate you, if possible, in discovering two around Mars, as the proportion seems to require six or eight around Saturn, and perhaps one each around Mercury and Venus." It was, says Mr. Proctor, from this suggestion, no doubt, that Voltaire and Swift borrowed their guesses, which, however, they present in such a way that some supposed they had really seen the satellites—an idea utterly inconsistent with possibilities, even if Kepler's original suggestion be overlooked.—*Eng. Mech.*

ANOTHER FRUITLESS CRUISE FOR THE POLE.—Advices from the eastern coast are to the fact that Captain Tyson's latest Northern venture was fruitless. Captain Tyson says that during his passage north to Disco they had to work their way through 200 miles of ice, and very heavy weather was encountered during the whole passage. At Disco they expected to meet the expedition steamer, but she did not appear, and after waiting in vain for many days they at length started on their return passage to Cumberland Straits on the 22d of August. Several terrific gales were experienced on this passage, one of which lasted four days, during which time the vessel was hove to, drifting helplessly among immense icebergs, which threatened at every moment to destroy the frail craft. The sufferings of those on board during these four days can not be adequately described. They almost gave up in despair, and had not the vessel been of the strongest possible build, it probably could not have weathered the gales. They finally arrived at Cumberland Straits on the 31st of August, and remained there nearly a fortnight, resting and recuperating after their rough experience. September 12th, they sailed for home, and trouble began again almost immediately, nor seemed to end until they anchored in Provincetown Harbor. They had gales all the way.

It is pointed out that the factor of safety or stability of the Cleopatra's Needle is too small. As it stands, it is already calculated to bear a pressure of 90 lbs. to the square foot, whereas the force of no hurricane is believed to exceed 25 lbs. to the foot. Mr. John Holden, architect of Manchester, recalls the fact that on the 7th day of February, 1868, the pressure registered at the Liverpool Observatory was over 60 lbs. to the square foot. The instrument, in charge of Mr. Hartnup, only registered up to 60 lbs., but his opinion was that the pressure reached between 70 lbs. and 80 lbs. to the square foot. At Liverpool, on the 27th of September, 1875, the pressure registered was 70 lbs. to the square foot; and at the same place some time in April, 1867, the pressure was 45 lbs. At Sydney, Australia, on the 10th of September, 1876, the Government Astronomer reports "that the wind in some of the gusts lasting several minutes attained the extraordinary velocity of 153 miles an hour, equal to a pressure of 117 lbs. to the square foot; and during twelve minutes between twelve and half-past the velocity of the wind was 112 miles per hour." The question of the velocity and pressure of the wind is of great importance, especially in the manufacturing districts; and for many years the firm of which Mr. Holden is a member, in calculating the stability of factory chimneys, has assumed the pressure to be not less than 80 lbs. to 90 lbs. on the square foot.—*Engineer.*

GENERAL MINING NEWS.

CALIFORNIA.

THE BODIE DISTRICT.

From the *Standard* of the 4th inst. we take the following concerning some of the principal mines of this district:

"The recently-arranged compromise between the Bulwer and Belvidere mining claims is a matter for congratulation, as it will bring prominently before the people one of the best properties in the Bodie District. For months the deadlock between the two mines has resulted in confining many hundreds of tons of the richest ore in the district in the drifts and winzes of the respective properties. With the Bulwer and Belvidere added to our bullion-producing mines we can certainly claim the richest mining district on the face of the globe. Our principal mines, such as the Bodie, Standard, Bulwer, Mono, Black Hawk, Tioga, Goodshaw, Champion, Red Cloud, and a dozen others, are all improving in appearance, and a visit to them during the week past convinces us of their increasing richness and permanency. The long spell of fine weather was providential, in view of the fact that it gave time for many companies to procure the necessary lumber for covering over their various shafts and works."

The Stockton *Independent* says:

"Within the last six months, several valuable quartz claims have been discovered in Calaveras and Tuolumne counties, and the prospects for the renewal of the former good times once enjoyed in those counties on account of the activity in mining operations seem to be better than they have been for many years. There is every reason to believe that the mineral wealth of those counties is practically inexhaustible, and that both quartz and gravel mines will continue to be discovered rivaling in richness those that have formerly been worked."

There are rumors of a rich strike in Kernville, Kern County. The Sumner Gold Mining Company, on their 150-foot level, 550 feet south of the main shaft, have found a body of ore ten feet thick, which, it is said will yield from $30 to $50 per ton.

THE BALD MOUNTAIN GRAVEL MINING COMPANY.

The *Nevada Transcript* says:

"This company was incorporated and commenced operations about nine years ago, and for six years past has produced a larger amount of gold annually than any other similar enterprise in the State. The claim is situated at Forest City, Sierra County, northeast of Nevada City, a distance of about 35 miles, as the winding wagon-road runs, but in a direct line, only some 12 miles.

"The pay channel of the Bald Mountain Company is from 500 to 600 feet wide, from two to three feet deep, and runs nearly north and south. It is entirely a quartz wash. Last year 212,000 tons were extracted. The average pay of the gravel is $1.42 per ton. During the six years the company have been fairly at work, the dividends have amounted to $664,000, the total yield being about $1,300,000. The dividends average about the same from one year to another.

"One year ago, the channel was lost, being cut in two by a flow of lava, which carried it away. Some two months since, it was found again, in the mean time over 500 feet of barren ground having been passed over. After it was discovered, the first prospect amounted to $9.94 per car-load of two tons, and the lowest prospect yet made has given $3.50 per car-load.

"Ordinarily, the locomotive at each trip runs into the mine with fifty cars, containing men and lumber, at the rate of nine miles an hour. The up-grade is 221 feet to the mile, and many of the curves are laid on a sixty-foot radius. In coming out, the train consists of the locomotive and twenty-five cars, each containing two tons of gravel.

"There are two dumps, one with a capacity of 26,000 tons and the other 16,000. There are at present 36,000 tons of gravel on the dump, and washing will be commenced when the rainy season sets in. Oregon Creek is used for a tailings deposit, and the north and south branches of that stream supply an abundance of free water. The company owns the mountain for a distance of 4800 feet beyond the point to which they have thus far penetrated. At a very low estimate, they have sufficient ground to continue working for ten years yet."

CANADA.

DUNCAN SILVER MINING COMPANY.

The annual meeting of this company was held in Boston on the 2d inst. The report of the treasurer represented the company to be in a flourishing condition, being out of debt and having $5500 cash in the treasury, besides 10,000 shares of stock; the expenses average about $2100 per month. The report of the superintendent of the mines, which are situated on the northern shore of Lake Superior, stated that No. 3 shaft is now down 105 feet below the cross-cut, or 482 feet from the surface, and a drift has been started. The silver extends over a larger portion of the shaft than ever before, and it will pay to work it. Upward of one sixth of the rock coming up the last two days has been good stamp stuff, most all showing some native silver, some silver glance, and the breccia showing silver in facets between the seams, and the rock next the cabb, on the north, being impregnated with fine specks.

The mining of asbestos in Thetford and Ireland, County of Megantic, Quebec, is said to be making good progress. Already some sixty tons have been shipped to the United States over the Quebec Central Railroad. The quality of the mineral is pronounced very fine.

IDAHO.

We are indebted to the Boise City *Statesman* of November 30th, 1878, for the following *résumé* of the mining outlook in Idaho: "The impression is becoming general that next season will bring a large number of miners to the placers on Snake River. It has long been known that fine gold was very generally diffused throughout the gravel deposits in the bars and banks of the river at short intervals throughout its entire length. The same holds true with regard to the Boise, Payette, and all its larger tributaries. In essaying to work these mines by the older processes, miners have been foiled in their attempts to save the gold. The gold has become so comminuted—so fine and light by the long course of washing from its first starting place in the mountains—that it would escape in spite of all known methods to save it. This difficulty has now been completely overcome by the new process of silver-plated sheets, whose efficiency in saving the gold has been demonstrated. Several companies are now at work on the upper Snake

River, and the number will increase to hundreds next year. This vast field for placer mining will bring thousands into the territory next year to engage in mining and other pursuits. Quartz mining has also received a fresh impetus during the season, which is passing away. The gold and silver-bearing quartz veins of Owyhee, Boise, Alturas, and Lemhi Counties are attracting a large share of attention."

From the Silver City *Avalanche* of the 30th ult. we take the following:

"The Black Jack continues to yield largely. The ore now being taken out of the winze in the adit tunnel is richer than any which has preceded it, and that which has been hauled to the mill for several days past averages more than $100 to the ton. The rock is of uniform quality, showing a splendid vein, and a steady increase of gold throughout. The new quartz house at the mine has just been completed, and the mine is now in fine condition for future operations. All the dead work is finished, and the cross-cut will probably be completed to the main ledge by to-morrow. The great lode of the country is certainly looming up in Florida Mountain. At present this mine employs a force of some sixty men, and fifty tons of ore are daily shipped to the two mills, which are kept running night and day. Their united bullion yield is about $3000 a day.

"At the Potosi, the work of repairing the shaft is nearly completed. Hoisting works will go up next week. When completed, a drift will be run at a depth of 120 feet and the shaft will also be sunk further. The main ledge shows up splendidly in rich rock. A small crushing of unassorted ore recently yielded in the vicinity of $50 to the ton.

"Work is going ahead at the Lone Tree mine, Florida Mountain under favorable auspices. The claim is owned by Messrs. Upham, Hays & Dillinger. The rock thus far extracted has a heavy preponderance of gold and the ledge shows one of the best-defined veins in the country. Buildings have been erected at the mine and preparations made for a winter campaign. The owners contemplate putting up reduction works in the spring.

"S. Bruce has taken a considerable quantity of good rock out of the Bannock recently.

"The Phylix mine, near the Trook and Jennings, is turning out ore that yields several hundred dollars to the ton."

MONTANA.

THE STEMPLE DISTRICT.

We take the following from the Helena *Independent* of November 28th:

"Messrs. Stemple & Lahey, owners of the Whippoorwill mine, at Mt. Pleasant, one mile and a half east from the Penobscot mine, came to town yesterday and left at Hershfield & Bro.'s bank 420 ounces of retort, the product of ten days' run of their 10-stamp mill. The mine is proving quite rich.

"In the Hickey mine, an extension of the Bluebird, a short distance from Mt. Pleasant, a body of rich ore six feet wide has been struck. Messrs. Hickey & Cotter are working the mine. They promise to bring in $15,000 in retort next week. It looks now as if the next large brick from the Penobscot country will be cast from the Bluebird.

"Other strikes of rich ore are reported from the district, among them a lead one mile and a half from the Penobscot, which is claimed as an extension of that vein."

THE PENOBSCOT.

We take from the *Mining Stock Circular* of December 13th the following extracts from letters of the superintendent concerning the mine:

"November 23d.—The new stamps are working well. During the stoppage to make connections, the plates were cleaned off, and I brought back to our safe at Belmont, about $3700 gold. There is nothing new of importance from the mine. The engine and drum are at the mine, and will be very shortly at work.

"November 25th.—Hoisting-engine will be in place this week. Work is progressing well at the mine, and the whole stamp-mill is doing splendid duty. The new stamp is doing more than the old one.

"November 27th.—Main shaft now down 152 feet, vein showing remarkably well for 5 feet along the hanging wall, remainder mixed with waste rock as reported last week. The drift on the 100-foot level went badly broken, but a 'cross-cut' proved that the vein at this point was thrown 15 feet to the footwall by a large 'horse.' We are working on the vein, no waste in the drift, and the prospect good. The east drift on the 60-foot level is looking remarkably well, showing carbonate all along the hanging wall. I made an examination of the vein at the bottom of the 'Snowdrift' shaft this week, and was so pleased with the appearance of the vein that I put four miners to drive on it at each of the shafts; the vein is over 4 feet wide with a beautiful hanging wall; the quartz is lively and hard. The 20 head of stamps are working night and day successfully, and kept well supplied with ore. We put up the Belmont engine; it is a small one, but will do all we will require in the way of hoisting for some time to come. The water is coming in so fast in the shaft that all the horse whim could do was to keep it out. The general appearance of the mine is good, and every thing running smoothly."

NEVADA.

THE COMSTOCK.

We condense the following from the mining summary in the Gold Hill *News* of the 4th inst.:

"At the Sierra Nevada mine an entire change of management has taken place. Mr. Bonnemort, the able Superintendent for several years past, has been removed, and A. G. McKenzie, for years past foreman at the C. & C. shaft and the Ophir mine, has been elected to succeed him. This change was owing to the control having passed into the hands of the bonanza firm. Mr. McKenzie is one of the best miners on the lode, and will leave nothing undone to prove the worth of the mine in the shortest space of time possible.

"It is the universal opinion of all the experts and judges who have seen the Sierra Nevada ore development on the 2100 and 2200 levels, that the actual ore development, without reference to its future prospective value, is actually worth more than the stock is selling for to-day, and still the stock weakens and depreciates.

"The west cross-cut on the 2200 level has been stopped, the face still in low-grade ore mixed with broken porphyry. There is no appearance as yet of any west wall whatever. The drift north from the 2200 station has penetrated 10 feet of rich ore, the face still being ore of the same character last evening. It is the opinion, however, of the best judges, that it will soon pass through the ore, and, in a short distance further, into the same character of vein porphyry found in the west cross-cut, 65 feet further south. Sinking the main incline has been resumed to open up and prospect the 2300 level.

"At the Ophir, stoping ore from the Hardy vein, on the 1900 level, has been commenced. At that point the vein is only about 9 or 10 feet in width, but the ore is very rich, the car samples running $300 and more to the ton. Another opening in the vein is being made on the 2000 level, where a drift has been started northward, the car samples of which assay $200 to $216 per ton. Both the face of the north drift on the 2000 level and the bottom of the main incline show a steady and favorable softening of the vein matter that leads to the belief that the hard block of porphyry lying to the eastward of the incline is about to give way to a healthy ore-bearing vein formation.

"On the 2100 level of the Savage the east and south drifts, from the bottom of the north winze, both show an improvement that leads to the belief that something much better may be found soon.

"It will be but a very short time before the pumping machinery of the Combination shaft will be in complete running order, and sinking below the 2250 station resumed.

"In the Alta, Belcher, Overman, Imperial, and other mines, work is progressing as usual, without any change of value."

THE CHALK HILLS OF NEVADA.

The Virginia City *Chronicle* says:

"For many years the so-called chalk hills, situated to the northeast of this city, were left unnoticed in the eager search for gold and silver. Finally they were noticed by a New York and San Francisco firm, who have utilized them in a most remunerative way. The article called electro-silicon, for which a multitude of the inhabitants of this State and California pay two and four bits for a small box, is nothing after all but the product of our chalk hills, shipped to the East, carefully reduced to an impalpable powder, and returned to this coast as a thing of household utility. A number of visiting gentlemen of a chemical turn of mind have on various occasions expressed a wonder why this immense deposit was not put to a more thorough and scientific use than that of merely furnishing a powder with which glass and metal ware could be cleaned and polished. It is asserted that there is an immense fund of wealth lying in these same chalk hills, were some enterprising manufacturer to devote his attention to the reduction of the material into one of the elements so much needed in the manufacture of glass, porcelain, and artificial stone—namely, silica. The purposes for which this infusorial deposit of silica, right here near us, could be used are as a polish, under the name of electro-silicon (its only use so far), as a non-conductor of heat in refrigerators and fire-proof safes; as an absorbent of nitro-glycerine in the manufacture of dynamite or giant powder, and in the manufacture of glass, enamel, pottery, porcelain, and soluble glass. When giant powder in its various forms first became used in this section, we were accustomed to read of the infusorial earth, procured from Europe, used in its manufacture, never dreaming that a mine of it existed in this vicinity."

UTAH.

THE STEWART GOLD MINE.

Regarding this mine, which is located in the Bingham District, the Salt Lake *Tribune* of the 7th inst. says:

"The Stewart mine is being incorporated under the laws of the territory, with a capital stock of $6,000,000, divided into 60,000 shares of $100 each. The mine and mill cost about $150,000, and are owned principally by Messrs. Gilmer & Salisbury. They started up the mill on the 8th of November to make an experimental run, which was completed in twenty days, after meeting with numerous little delays incidental to starting new machinery on strange ore. The result was a gold brick of about fifty pounds, valued at $9200, which was brought to this city last night. It was expected the first brick would amount to about $15,000, but some defect in the screens enriched the tailings at the expense of the amalgam. Notwithstanding this, the run is deemed a success, and the battery at the mill will be increased by an additional ten stamps, to be put in by the 15th inst."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending November 5th:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
209,544	Wire Barding Machine	Frank Billings	Cleveland O.
209,549	Pump	Willard Clough	Oshkosh, Wis.
209,554	Process and Furnace for Reducing and Smelting Ore	Wm. E. C. Eustis (a)	Milton, Mass.
209,562	Tripod Head for Surveying Instrument	Wm. Gurley (b)	Troy, N. Y.
209,563	Apparatus for the Manufacture of Gas	Geo. W. Harris	Po'keepsie, N. Y.
209,572	Packing for Journal-Boxes	Wm. V. Kay	Forrest, Ill.
209,584	Combined Heater and Feeder for Boiler	Rufus N. Pratt	Hartford, Conn.
209,588	Machine for Edging, Sizing, and Straightening Non-Cylindrical Metal Bars	James S. Seaman	Pittsburg, Pa.
209,592	Automatic Switch or Cut-out for Telephones	Thos. A. Watson (c)	Boston, Mass.
209,594	Electrical Gas-Lighting Apparatus	W. H. H. Whiting	Chelsea, Mass.
209,601	Steam-Trap	Henry W. Beins	New York, N. Y.
209,602	Fluid Pressure-Regulator	Jno. F. Bennett	Pittsburg, Pa.
209,612	Engine-Governor	Henry T. Farnsworth	Bellefonte, Pa.
209,626	Wire-Rope Machine	Chas. K. Pickles	St. Louis, Mo.
209,630	Apparatus for the Manufacture of Illuminating Gas	Myron H Strong (d)	Brooklyn, N. Y.
209,631	Rotary Ore-Stamp	Dock E. W. Taylor	San Bernardino, Cal.
209,635	Lifting-Jack	Henry M. Willis (e)	Mineola, N. Y.
209,638	Gas-Regulators	Joseph Adams	Washington, D.C.
209,661	Hydraulic Mining Apparatus	Geo. W. Cranston	San Francisco, Cal.
209,662	Turbine Water-Wheel	Jacob Croft	Scipio, Utah.
209,685	Blow-Pipe	Charles Hoffman	New York, N. Y.
209,698	Process of Purifying and Increasing the Illuminating Power of Gas	Orazio Lugo	Flushing, N. Y.
209,743	Rolls for Reducing Old Iron Railway Rails	Burroughs P. Brunner	San Francisco, Cal.

(a) Assignor ½ his right to Henry M. Howe, Boston, Mass.
(b) " to W. & E. L. Gurley, same place.
(c) " to Bell Telephone Co., same place.
(d) " to Lemuel W. Serrell, same place.
(e) " ½ his right to Garry Vanderbeck, same place.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, with the full name and address of parties soliciting the same:

Pumping Machinery (duty 4,000,000 gallons per day); Supt. Hyde Park and Lake Water Works, Town of Lake, Mass.	Dec. 17
Dredging near Snow Hill, in Pocamoke River, Md.; Wm. P. Craighill, Major of Engineers, Baltimore, Md	" 17
Constructing about 200 miles for the Northern Pacific Railroad, from the Missouri River to the Yellowstone; Charles B. Wright, President Board of Directors, 23 Fifth avenue, New York City	" 17
Dredging in Currituck Sound, N. C.; Chas. B. Phillips, Captain of Engineers, Norfolk, Va	" 20
Grading Thomas street, Cincinnati, O.; John E. Bell, President Board of Public Works, Cincinnati, O	" 3
100 Two and Four-Horse Army Wagons; D. H. Rucker, Assistant Quarter master-General U.S.A., Philadelphia, Pa	" 3
Railway Construction from the Province of Ontario to the Pacific Ocean, about 2000 miles; F. Braun, Secretary Dept. of Public Works, Ottawa, Canada	Jan. 1, 1879
Railway Construction, 310 Miles; F. Braun, Secretary of Department of Public Works, Ottawa, Canada	"
Bridge; Howe Truss, Iron, 650 feet long; Board of Supervisors, Wapello, Wisconsin	Jan. 6, "
106,000 gallons Best Quality, Winter-Strained, Pure Lard Oil for U. S. Light-House Service; John Rodgers, Rear-Admiral U. S. Navy, Washington, D. C.	Jan. 8, "
Gas Illumination of Rio de Janeiro, Brazil; Salvador de Mendonca, Brazilian Consul-General, 42 Broadway, New York City	March, "
Locks and Keys for Mail Bags; D. M. Key, Postmaster General, Washington, D. C.	March 20, "
Coal for Schools of Youngstown Board of Education, Youngstown, O.	March 29, "

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending Dec. 7th and years from January 1st:

TONS OF 2240 LBS.	1878.		1877.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co..	50,706	1,978,241	52,129	1,741,890
D. L. & W. RR. Co.	59,457	2,021,286	61,764	1,854,798
Penn. Coal Co.....	18,760	876,068	22,853	976,248
L. V. RR. Co.....	19,819	784,860	25,612	859,695
P. & N. Y. RR. Co..	377	30,495	753	41,743
C. RR. of N. J.....	27,505	913,679	35,166	1,255,325
Penn. Canal Co....	1,530	347,257	1,989	352,386
	178,154	6,951,886	200,266	7,082,085
Lehigh Region.				
L. V. RR. Co.....	65,078	2,303,396	78,455	3,157,049
C. RR. of N. J.....	17,548	1,263,133	39,291	1,427,410
D. H. & W. B. RR..	1,050	37,653	1,120	32,866
	83,676	3,604,182	118,866	4,617,325
Schuylkill Region.				
P. & R. RR. Co.....	6,102	4,812,259	140,547	6,423,820
Shamokin & Lykens Val.....	24,384	750,323	12,922	678,424
	30,486	5,562,582	153,469	7,102,244
Sullivan Region.				
Sul. & Erie RR. Co.	1,103	33,876	961	19,724
Total	293,419	16,152,525	473,562	18,821,378
Increase.....	.....	.....	.....	.....
Decrease	180,143	2,668,853	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Belvidere Delaware Railroad Report for week ending Nov. 30th:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	824	14,052	54,390
Coal for shipment at South Amboy	13,365	402,094	495,943
Coal for distribution.....	6,472	179,093	179,735
Coal for Company's use.....	1,033	76,925	65,784

Coals Cleared on the Canals of the State of New York for the week ending Nov. 14th, and year from the opening of navigation:

Tons of 2000 lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Anthracite	26,548	607,485	42,647	999,096
Bituminous.....	7,102	190,504	9,382	260,509
Total amount cleared	33,650	797,989	49,029	1,259,605

Shipments of Anthracite Coal during week ending November 23d, 1878, and total for year to date, compared with corresponding time last year, as prepared by Mr. John H. Jones, Accountant of the Anthracite Board of Control.

INTERESTS.	Week.		Total for year to date.	
	Tons.	Cwt.	Tons.	Cwt.
Philadelphia & Reading R.R.	176,038	15	4,594,883	16
Lehigh Valley R.R.....	98,829	8	3,064,419	11
Central R.R. of N. J.....	69,803	18	1,956,760	16
Del., Lack. & West. R.R....	64,507	14	1,912,172	7
Del. & Hudson Canal	53,501	15	1,786,826	5
Pennsylvania R.R	38,254	17	1,206,478	11
Pennsylvania Coal Co.....	22,821	17	865,236	15
Total.....	523,758	4	15,386,778	1

INTERESTS.	Corresponding time last year.		Difference.	
	Tons.	Cwt.	Tons.	Cwt.
Phila. & Reading R.R..	6,104,488	14	D. 1,509,604	18
Lehigh Valley R.R.....	4,016,865	17	D. 952,446	6
Central R.R. of N. J....	2,422,484	3	D. 465,723	7
Del., Lack. & West. R.R	1,883,644	10	I. 28,527	17
Del. & Hudson Canal....	1,690,202	0	I. 96,624	5
Pennsylvania R.R.....	1,388,131	0	D. 181,652	9
Pennsylvania Coal Co...	975,355	0	D. 110,118	5
Total.....	18,481,171	4	D. 3,094,393	3

NOTE.—The tonnage for the week on this statement is approximated from the weekly returns of the transportation companies, and is subject to adjustment each month to conform to the returns made by each interest to the Board of Control

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads amounts to 121,600 tons, as compared with the corresponding period in 1877.

Receipts and shipments of coal at Chicago Ill., for the week ending Nov. 30th, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts.....	51,055	1,670,414
Shipments.....	6,953	266,218
Perth Amboy Business:		Tons.
Received for the week		36,391
Shipped for the week.....		16,110
On hand Nov. 30th..		75,465

The Production of Bituminous Coal for the week ending Nov. 30th was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb..... 37,582		1,570,723
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	6,315	282,567
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	2,719	138,969
*East Broad Top.....	1,758	55,123
Clearfield Region, Pa.		
*Snow Shoe.....	1,076	23,823
*Tyrone and Clearfield..... 23,837		1,109,663
Allegheny Region, Pa.		
*Pennsylvania R. R	4,448	178,687
Pittsburg Region, Pa.		
*West Penn R. R.....	3,131	160,684
*Southwest Penn. R. R.....	381	22,310
*Penn & Westmoreland gas coal, Pa. R. R..... 17,528		583,382
*Pennsylvania R. R..... 10,262		381,523

*For the week ending Nov. 14th.

The Production of Coke for the week ending Nov. 14th:

Tons of 2000 lbs.	Week.	Year.
West Penn R. R....	1,781	75,853
Southwest Penn. R. R.....17,525		682,846
Penn. & Westmoreland Region, Pa. R. R.	2,022	66,306
Pittsburg, Penn. R. R.....	2,518	101,303
Penn. R. R. (Allegheny Region).....	....	12
Total... 23,846		926,323

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Dec. 13, 1878.

Anthracite.

To say that there is but little business doing, and that prices are in the utmost confusion, is about the only description that can be given of the present condition of the market. Every thing has hung on the prospects of forming a combination, and as these are now reduced to a minimum, dealers and consumers purchase to supply only pressing necessities, and prices are from 70c. to $1 under circular rates in some instances.

Since our last, Mr. J. H. Swoyer has replied as follows to Messrs. Gowen and Dickson, the Board of Control Committee appointed to negotiate for a combination for 1879:

"December 7, 1878.

"*Messrs. Dickson and Gowen, Committee:*

"GENTLEMEN: I have to acknowledge the receipt of your favor of the 5th inst., and in answer would say that we were appointed a committee only for the purpose of arranging for temporary stoppages to sustain the trade pending definite negotiations in January, and afterward for an arrangement for 1879. If you insist that a permanent arrangement must be made before January 1st, next, we, as a committee, have no authority and no business necessary to occupy your time further.

"If I am wrong in this construction of your letter, and you do not make it a condition that an arrangement shall be concluded before January 1st, please advise me.

"Yours truly, J. H. SWOYER, Chairman, Committee."

Messrs. Gowen and Dickson replied to the above yesterday, and, from all we can learn, informed Mr. Swoyer that he did not misconstrue their meaning. So now, if nothing can be done by the 27th inst., war will probably be declared. At the present time there is barely a possibility of doing any thing.

We have before us the coal tonnage report of the Lehigh Valley Railroad Company for the fiscal year ended November 30th. The following is a statement of anthracite coal received:

	Tons.	Cwt.
From Wyoming Region.....	919,712	9
" Hazleton Region.....	1,520,049	7
" Upper Lehigh Region..... .	948	15
" Beaver Meadow Region.....	435,951	4
" Mahanoy Region.....	565,825	16
" Mauch Chunk Region.....	1,633	12
" Port Delaware.....	2,494	15
Total...	3,446,615	18
Same time last year.....	4,362,124	9
Decrease in 1878	915,508	11

This loss is divided among the different regions as follows:

	Tons.	Cwt.
Wyoming Region.....	112,065	4
Hazleton Region.....	601,308	14
Beaver Meadow Region.....	141,500	19
Mauch Chunk Region.....	4,465	15
Mahanoy Region.....	58,912	5
	918,252	17

Less the following increase:

	Tons.	Cwt.		
Upper Lehigh Region.....	249	11		
Port Delaware.....	2,494	15		
			2,744	6
			915,508	11

The fiscal year of the Philadelphia and Reading Railroad Company closed November 30th. The coal tonnage for 1878 was 5,909,140 tons, and for 1877, 7,255,317, showing a decrease this year of 1,346,177 tons. The business of the Schuylkill Canal this year was 689,718 tons, as compared with 814,036 tons last year, showing a falling off for 1878 of 124,318.

Some of the strongest arguments against combination will be expressed by the annual reports of a few of the companies. The Reading Railroad Company's report will show that a small business under combination is worse than a large business in open competition at "ruinous" prices. The Philadelphia *Ledger* produces the following additional argument against a combination for 1879:

"At a meeting of the Board of Directors of the Lehigh Valley Railroad Company yesterday, a quarterly dividend of *one* per cent was announced, payable January 15th, 1879. It was reported to the Board that the *net* receipts of the company this fiscal year (which ends on the 30th of November) are $396,000 less than they were in 1877, when there was paid at four stated dividend periods 5½ per cent. This year the company has made four quarterly dividends of 1 per cent each. The 1½ per cent difference less this year than last is equal to $406,000. This company has always claimed to never pay in dividends more than it earns, and starts for the coming year with the same quarterly dividend that it paid the last. It is hoped it may hold the same rate to the end of the year, and, if the coal trade should brighten up a little, do something better."

It would seem as if this were sufficient ground for the Lehigh Valley R.R. Co to make a demand for an increased allotment.

As the Delaware and Hudson Canal Co. and the Delaware, Lackawanna, and Western R.R. Co. each show an increased business this year, and the expenses of mining at their collieries and transporting have been no greater per ton, the former should show, upon the same system of book-keeping as it adopted last year, a very good dividend for these times, while the latter should have a liberal balance over fixed charges, as the price received for coal should be from 70 to 80c. per ton higher than last year.

The Pennsylvania Coal Company is always better off at a reduced business and high prices than when there is such competition as existed in 1877.

It therefore appears that the Reading and Lehigh Valley companies will be better off without a combination, unless they can secure a larger business; while the Wyoming companies are, according to their own accounts, benefited by the organization. If the latter will make the concessions asked, something may be done, but otherwise we do not see how any thing is to come out of the present efforts.

The New York *Times* says:

"At Rondout the coal wharves of the Delaware and Hudson Canal Company, together with upward of 150,000 tons of coal, were entirely submerged. Large quantities of coal have been washed into the bed of the creek. Canal-boats and small vessels were swept away from their moorings; many of them are damaged beyond repair."

This will make a convenient excuse for cutting prices next year on "rusty coal."

The production of anthracite coal last week was 293,419 tons, as against 527,962 tons the previous week, and 473,562 tons the corresponding week of 1877. The total production from January 1st to December 7th was 16,152,525 tons, as compared with 18,821,378 tons for the like period of last year, showing a falling off this year of 2,668,853 tons.

Bituminous.

This coal is very quiet, and without a feature, as is always the case at this season of the year. The producers see but little prospect of an anthracite coal combination, and are making their preparations for an active year of competition in 1879.

New York.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Along side in New York.
Westmoreland and Penn.....$4.25		.....
At Greenwich, Philadelphia		$5.50
At S. Amboy.....	5.00	5 50
Kanawha at Richmond.....	4.10	5.40
Red Bank Cannel, Pa., at Philadelphia..	8.00	8.50
Youghiogheny, Waverly Co., at Balt ...	4.00	5.65
Despard, West Va.....	4.50	6.00
Murphy Run, West Va., at Baltimore.. ..	3.75	5.85
Fairmount, West Va., " " ...	3 75	5.70
Newburg Orrel. Md. " " ...	3.75	6.00
Cannelton Cannel, West Va		10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65
Peytona Cannel, W. Va., at Richmond...		10.00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2.75@2.90	4.35@4.50
Cumberland, at Baltimore.....	2.90@3.00	4.35@4.50
Cl'rfl'd "Eureka" and "Franklin."		
At mines.....	0.75	....
At Baltimore.....	3.25	4.50
At Philadelphia.....	3.25	4.50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne.....	7s.6d.	$2 50@ $3.50
Liv. House Orrel, at Liv.....	25s.	13.00
Iroe Hall Cannel " ....,	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal.....	25s.	7.50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1.75	$4.50
Caledonia, at Pt. Caledonia.	1.50	4.25

Glace Bay at Glace Bay....	1.50		4.00
Lingan, at Lingan Bay.....	1.50		....
Intern'l Mines, at Sydney...	1.75		4.50
Pictou, Vale Mines, at Pictou	2.00		4.70

Wholesale Prices of Anthracite Coal for December Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken		3 30	3 30	3 30	3 85	3 40
*Pittston, at Newburg						
L. Val. Coal Co., at Amboy						
Wilkes-Barre at Pt. Johnson	3 35	3 35	3 40	3 45	3 90	3 30
Plymouth Red Ash at Port Johnson			3 40	3 45	4 00	3 30
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy						
Cross Creek, at Port John.						
Buck Mount. Vein at Elizabeth Port or S. A.	3 50	3 50	3 50	3 50	3 75	3 25
Hazelton at Amboy	4 00		3 75		3 90	3 40
SCHUYLKILL COAL *At Pt. Richmond, Phila.*						
Hard White Ash	3 50	3 50	3 50	3 55	3 95	3 40
Free-burning W. Ash			3 40	3 50	3 95	3 30
Schuylkill Red Ash				3 75	4 00	3 30
Lorberry			3 80	3 95	4 00	3 40
Lykens Valley Vein			3 80	3 95	4 00	3 60
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 20	4 20	4 20	4 20	4 40	3 80
Free-burning W. Ash			3 90	4 05	4 40	3 80
Schuylkill Red Ash				4 35	4 50	3 90
Lorberry				4 60	4 60	4 25
Lykens Valley Vein			4 60	4 70	4 70	4 35

* Forty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburg, the current rate of harbor freight will be allowed from the prices here given.

Retail Prices.

Per ton of 2000 lbs.

Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered	$5.00	$5.00	$5.00
Lack. coal, delivered below 59th St.	4.50	4.75	4.50

Bituminous.

Liv. House Orrel	$18.00	American Orrel	$11.00
Liv. House Cannel	18.00	Red Bank Cannel	7.00
Am. "	11.00	Cumberland	9.00
Ca'n'lt'n Bl'k, or splint.	10.00		

Buffalo. Dec. 10, 1878.

[Specially reported by E. L. HEDSTROM.]

	Lump.	Grate.	Egg.	Stove.	Nut.
Scranton	....	$4.55	$4.65	$4.90	$4.40
Wyoming	....	4.55	4.65	4.90	4.40
Lehigh (Sugar Loaf)	....	....	....	....	....

Blossburg, $3.50, F. O. B.

Chicago. Dec. 10, 1878.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.25	Erie and Brier Hill	$5.00
" Chestnut	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg	5.50@6.00
" Egg	6.00	Piedmont	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati. Dec. 10, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney	11c.	7½c.
Camden	9c.	5½c
Cannel	17@18c.	13c

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Hamilton, Ont. Dec. 10, 1878.

[Specially reported by H BARNARD.]

Retail prices delivered per ton of 2000 lbs.

cr. or Wilkes-B. Grate.	$4.75	Lehigh Lump	$6.00
" " Egg	4.75	Brier Hill	5.00
" " Stove.	5.25	Massillon	4.50
" " Nut	4.75	Smithing	5.50

From wharf or yard to the trade, 50c. per ton additional. Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

Montreal. Dec. 10, 1878.

[Specially reported by Messrs. ROBERT C. ADAMS & Co.]

Wholesale per 2240 lbs.

Scotch Steam	$4.50	Cape Breton Steam	$4.00
Pictou	4.25	Newcastle Smith's	5.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$6.50	Chestnut	$6.00
Egg	6.25		

Philadelphia. Dec 12, 1878.

The condition of the coal trade is one of extreme anxiety on the part of both producers and consumers, and until the programme for next year is settled, there will be little or nothing done.

Many of the collieries in the Schuylkill region are stopped by excess of water inside, and many by want of orders.

Freights are declining, because the orders are excessively scarce. As low as $1.40 has been accepted to Boston, and several vessels have left this port light to go to Baltimore and Georgetown.

If the Board of Control wished to prostrate the business, and stop purchases, they have succeeded admirably.

Pittston, Pa. Dec. 10, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2.25
Chestnut	2.00
Pea	1.00

Delivered, 50 cents per ton additional.

Richmond. Dec. 10, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	2.50
Lewiston "	4.50	Norwood Gas and Kanawha Gas Coal	4.10
		Steam Coal	2.70

Sandusky. Dec. 10, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con. Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6.00	$6.00	$6.25	$5.75
Wilkes-Barre	4.80	4.90	5.15	4.65
Pittston	4.80	4.90	5.15	4.65

BITUMINOUS.

Massillon	$2.85	Straitsville	$2.00
Hocking Valley	2.50	Piedmont	1.54

Prices retailed delivered 50c.@75c. above car prices.

St. Louis. Dec. 10, 1878.

Reported by JAMES J. SYLVESTER, Secretary of the Anthracite Coal Association.]

Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna	$7.50@	Lehigh	$8.50@
Wilkes-Barre	7.50@	Connells. Coke.	6.00@
Schuylkill	7.50@	Blossburg	7.75@

Dec. 10, 1878.

[Specially reported by Messrs. LEWIS P. HARVEY & Co.]

BITUMINOUS.

Big Muddy	$3.65	Piedmont	$7.25
Indiana Block	3.25	Pittsburg	4.35
Illinois Coals	2.25@2.50	Peytona	7.50
Blossburg	7.75	Lehigh Val. Ant.	7.50@8.00

Toledo. Dec. 10, 1878.

[Specially reported by Messrs. GOSLINE & BARBOUR.]

We quote the following as the present prices for coal, f. o. b. on cars here, per ton of 2000 lbs.:

Ton of 2000 lbs.

	Grate.	Egg.	Stove.	Chest.
Pittston	$5.05	$5.15	$5.40	$4.90
Wilkes-Barre	5.05	5.15	5.40	4.90
Lackawanna	5.05	5.15	5.40	4.90

Lehigh lump, $6.00.

Ton of 2000 lbs.

Straitsville lump	$2.60	Massillon nut	$2.40
" nut	2.25	Willow Bank lump	2.85
Shawnee lump	2.60	" nut	2.40
" nut	2.25	Cumberland	5.00
Hocking Valley lump	2.60	Blossburg	4.60
" nut	2.25	Morris Run	4.60
Massillon lump	2.85	Gas Coal	3.25

Retail prices, delivered in the city, are: Stove, $6.00; Grate, Egg, and Chestnut, $5.75.

FREIGHTS.

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to Dec. 10th.

From	To	Rate per ton.	From	To	Rate per ton.
Bay City	Milwauk'e		Buffalo	Chicago	50
Buffalo	Erie		Chicago	Milwaukee	25
"	Cleveland	20	"	Green Bay	30–35
"	Chicago	60	Cleveland	Chicago	40–45
"	Cleveland	20	"	Milwaukee	40
"	Ashtabula	20	Detroit	Chicago	†1.50
"	Sandusky	30	Erie	Chicago	
"	Bay City	50	Fairhaven	"	70
"	Saginaw	60	"	Milwaukee	70
"	Marquette	*	Oswego	Chicago	70
"	Escanaba	60	"	Milwaukee	
"	Green Bay	60	"	Detroit	45
"	Racine	60	Sandusky	Toronto	
"	Milwaukee	60	Toledo	Milwaukee	50

* Lake shipments (Nov. 9) made at 1.00. † Pig-iron.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending Dec. 10th, 1878, are given below.

DATE.	From	To	Cargo.	R'te
Nov. 18	New York	Havana	Coal	1.50
" 18	New York	Baltimore	Iron	90
" 22	Booth Bay	Savannah	*	1.75
" 22	Boston	Alexandria	Salt	8
" 22	Curaçoa	Boston	Salt	9
" 23	Boston	New York	Salt	3
" 25	Perth Amboy	Wilmingt'n, N.C	RR. iron	2.00
" 25	Dutchess Junction	Richmond	Pig-iron	1.25
" 25	New York	Georgeto'n, D.C	Guano	1.50
" 26	San Francisco	Departure Bay	Coal	3.00
" 29	Perth Amboy	City Point	RR. iron	1.00
Dec. 3	New Haven	Philadelphia	Rails	1.50
" 3	Elizabethport	Richmond	Pig-iron	80
" 3	New York	Port Royal	*	1.75
" 6	New York	Bremen	Salt	25s.
" 6	Perth Amboy	Port Royal	RR. iron	1.85
" 6	New York	Richmond	Iron ore	1.00
" 7	Philadelphia	St. Thomas	Coal	2.65
" 7	Philadelphia	Havana		1.50
" 10	Boston	San Francisco	Iron	†

* Phosphate. † $10@$12.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Dec. 12th, 1878.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria	97½@1.00		
Albany			
Allyn's Point	1.25		75
Annapolis	60		
Augusta			
Baltimore	45		
Bangor, Me			1.50
Barnstable			
Bath, Me		1.75	
Boston, Mass	1.50@.175	1.75	1.25
Braintree			
Bridgeport, Conn.		1.35	65
Bristol, R. I			75
Brooklyn			
Cambridge, Mass.			1.50
Charleston	1.12½		
Chelsea			
Charlestown	1.80		1.50
Cambridgeport	2.00		1.50
Danversport	2.00†		1.75
East Cambridge	1.90		1.50
East Boston			1.25
Eliz'b'th City, N.C			
Fall River		1.35	90
Georgetown			
Gloucester	1.75		
Hackensack			
Halifax			1.75
Hartford		1.35	
Hingham			1.50†
Hoboken			
Hudson			
Jersey City			
Lynn	1.90		1.50†
Marblehead	1.75		
Middletown			
Nantucket, Mass.			
Newbern	85		
New Bedford	1.75	1.35	85
Newburyport		1.90	1.50
New Haven	1.15†	1.35	65
New London	1.35	1.35	70
Newport			75
New Rochelle	85		
New York	85@95	1.25	
Newark			
Norfolk, Va	70@75		
Norwich		1.50	80@90
Norwalk, Conn		1.50	
Pawtucket	1.50‡	1.85	1.00
Petersburg	1.00		
Philadelphia			
Port Eades			2.50
Port Royal			
Portland	1.55	1.75	1.50
Portsmouth, Va.	67½		
Portsmouth, N.H.	2.20	1.90	1.50
Providence		1.35	80
Richmond, Va	90@95		
Saco			2.00
Sag Harbor			
Salem, Mass		1.85	1.25
Savannah			
Saybrook			
Somerset			75
Southport			
Stamford			
St. John, N. B			1.00‡
Trenton			
Troy			70
Wareham		1.85	
Washington	1.00		
Williamsburg	85		

* And discharging and towing. † And discharging. ‡ And towing. § 3 cents per bridge extra

Alexandria and Georgetown to Boston, 1.75@1.85.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Dec. 13, 1878.

American Pig.—The business doing is confined to small lots, and does not aggregate any considerable quantity. The Thomas Iron Company is holding on the basis of $18 for No. 1 Foundry, but as other Lehigh irons are selling at a lower price, there is but little being done by this company. The outlook for the next thirty days is for a very quiet market. We quote No. 1 Foundry at $16@$18; No. 2 Foundry, $15@$17; and Forge at $14@$16.

Scotch Pig.—A sale of 500 tons of Eglinton iron at a low price in store is reported. Outside of this there is but little doing. We quote Coltness at $22@$22.50, and Eglinton, $19.50@$20.

According to the circular of Messrs. John E. Swan & Bros., of Glasgow, bearing date of November 29th, the number of furnaces in blast was 92, against 90 a year previous. The stock of pig-iron in Connal & Co.'s stores was 199,283 tons (a decrease of 250 tons for the week), as compared with 166,392 at the same date in 1877. The shipments to November 23d showed a falling off of 53,015 tons, as compared with 1877, and the imports of Middlesbrough iron a falling off of 11,534 tons. The average price of warrants during November was 43s. 2½d., or lower than

for any month for years past. The following were the quotations of leading brands of No. 1 iron: Gartsherrig, 50s.; Coltness, 50s.; Summerlee, 48s.; Langloan, 52s.; Glengarnock, 47s. 6d., and Eglinton, 43s. 6d. Middlesbrough iron, f. o. b., Tees, was quoted as follows: No. 1 Foundry, 39s. 9d.; No. 2, 37s. 9d.; No. 3, 36s. 3d.; No. 4, 35s. 9d, and No. 4 forge, 35s. 9d. Bessemer iron was quoted. f. o. b., Barrow, as follows; No. 1, 65s.; No. 2, 62s. 6d., and No. 3, 60s.

Rails.—We note sales of 5500 tons of steel rails for Missouri delivery and 4000 tons for Baltimore delivery and for Southern use. Also 500 tons of 30-lb. iron rails for shipment to California. There is a very good inquiry for steel rails with indications that some important contracts will soon be closed. We quote iron rails at mill at $32@$36 and steel rails at $41@$42.

Old Rails.—We learn of no business, and find it difficult to determine the true quotation, but adopt $19 as being perhaps the nearest.

Wrought Scrap.—We note a sale of 200 tons and quote at $22 from yard.

Cincinnati. Dec. 10, 1878.

[Specially reported by Messrs. Traber & Aubery, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B	$21.00@	$21.50—4 mos.
"	No. 2 "	20.00@	21.00—4 mos.
"	Soft Silver Gray	19.00@	18.00—4 mos.
"	Mill	19.00@	18.00—4 mos.
Tennessee	No. 1 Foundry	20.00@	—4 mos.
"	No. 2 "	19.00@	—4 mos.
"	Mill	18.00@	—4 mos.

STONE COAL.

Ohio	No. 1 Foundry	$16.00@	16.50—4 mos.
"	No. 2 "	15.00@	—4 mos.
"	No. 3 "	14.00@	—4 mos.
"	No. 4 "	13.00@	—4 mos.
"	Mill	15.00@	16.00—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry	18.50@	19.00—4 mos.
" "	No. 2 "	17.50@	—4 mos.
" "	Stove	16.00@	—4 mos.
" "	Mill	17.00@	—4 mos.

CAR-WHEEL

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30.00@	35.00—4 mos.
Maryland,	"Cedar Point	35.00@	—4 mos
Missouri,	"Maramec	28.00@	—4 mos

BLOOMS.

Charcoal	$45.00@	$50.00- cash.

SCRAP IRON.

Cast	40c. @	45c.—cash
Wrought	62½c.@	$1.00—cash

Louisville. Dec. 10, 1878.

[Specially reported by Messrs. George H. Hull & Co.]

The market continues very firm in price. Sales are somewhat curtailed, and will be until after January 1; but after that date we look for a brisk demand.

The usual time, four months, is allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21 00@$22.00	$19.00@$20.00
Southern Charcoal	18.00@ 18.50	16.50@ 17.00
H'n'g Rock, Stc'l & Coke	19.00@ 20.00	18.00@ 18.50
Southern Stonecoal & Coke	18.50@ 17 00	17.00@ 17.50
"Amer. Scotch"	$18@$19	Silver Gray... $16@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16.50@$17.00
No. 1 Stc'l & Coke, Cold-short & Neutral	16.50@ 17.00
No. 2 Stc'l & Coke, Cold-short & Neutral	15.50@ 16.00
No. 1 Missouri and Indiana, Red-short	20.00@ 21.00
White & Mottled, Cold-short & Neutral	14.50@ 15.00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$29.00@$33.00
Alabama and Georgia, Cold Blast	28.00@ 29.00
Kentucky, Cold Blast	25 00@ 30.00

Philadelphia. Dec. 12, 1878.

[Specially reported by Justice Cox, Jr., & Co., Iron Merchants, 333 Walnut street, Philadelphia.]

Pig Iron.—The demand for pig is falling off as the end of the year draws near, as most consumers want small stocks at that time. Yet the furnace companies are keeping sold up, and no iron has accumulated. It is thought that after the first of the year some idle furnaces can and will go in, being assured by their agents that their iron can be sold at ruling prices. We quote: No. 1, $17 to $19; No. 2, $16 to $18; Grey Forge, $15 to $17. Market firm.

Manufactured Iron.—The demand for bars is limited to small lots, to run until after stock-taking. We quote: Bars, 1 7-10 to 2c. per lb., as to quality. The plate mills continue fairly busy on old orders, nothing new coming in. We quote: Plates, 2⅛ to 6c., as to quality and delivery.

Skelp Iron is moving only in small lots, but at full quoted prices; the cutting so long indulged in seems to have passed away. Mills making this class of iron only accepting orders at a profit. We quote, 1 9-10 to 2c per lb.

Rails.—The steel rail mills continue to run busy at full power. We quote, $42 to $44. The iron rail mills have been running full for some weeks on 16-lb. rails, a large quantity having been sold to go out of the country. Prices are firm in consequence. We quote 32 to 37 at mills.

Scrap.—Wrought is exceedingly dull at low prices. Cast hard to move at any price. We quote wrought, $20 to $22; cast, $12 to $16.

Old Rails are in good demand at the advance. We quote, $19 to $20.

METALS

New York, Friday Evening, Dec. 13, 1878.

The business of the week under review has been small. During next week there may be some business done, but after that time, during the time of stock-taking and closing of books, there will be but little done on account of consumption, and this state of affairs will probably last until about the middle of January. During the mean time, however, speculation in some of the articles may be developed.

Gold Coin.—The price of gold has ranged, during the week under review, from 100¼ to 100⅛, and closes at 100¼.

Copper.—The business of the past seven days has been very small at 15⅞@16c., which are the quotations to-day. The Lake companies are strong at 16c., while outside companies are asking 15⅞c., with bids at 15¾c. No advices of a change in the London quotations have been received.

Under date of December 3d, we receive the following:

"In our report of yesterday, we omitted to mention the sale of a cargo of Bolivian ore (450 tons) and regulus (350 tons), just landed at Swansea, at 11s. for the former, and 11s. 6d. for the latter. Chili bars are steady, but not much doing; the only sale reported to-day was one of 25 tons, good ordinary brand, at £59, cash terms. This figure has been offered and refused for favorite marks, holders standing out for £59½. Moderate quantities of G. O. B.'s can still be purchased at £59; and of best sorts a few parcels may be had at £60 and £60½. Nothing doing in Australian; values of Wallaroo are called £68@£69; Burra, £66 to £66½."

STATISTICS OF COPPER—LONDON, LIVERPOOL, SWANSEA, AND FRANCE.

	Nov. 1st to 30th. Imports. Tons.	Deliveries. Tons.	
Fine foreign, chiefly Australian	397	686	London.
Chili—Bars	Nil.	Nil.	London.
Chili—" and ingots	2,204	1,773	Liverpool
Chili—In ores and regulus	569	682	& Swansea.
Totals, England	3,170	3,141	
Fine foreign, chiefly American	500	530	France.
Chili bars, ingots, and barilla	485	1,145	France.
Total	4,155	4,816	

	Stocks. Nov. 30th. Tons.	Oct. 31st. Tons.	
Fine foreign, chiefly Australian	6,320	6,609	London.
Chili—Bars	49	49	London.
Chili—" and ingots	19,877	19,446	Liverpool
Chili—In ores and regulus	3,785	3,898	& Swansea.
Totals, England	30,031	30,002	
Fine foreign, chiefly American	500	530	France.
Chili bars, ingots, and barilla	8,417	9,077	France.
Total	38,948	39,609	
Chili, chartered & afloat—Mail	8,065	7,855	
Chili, chartered & afloat—Telegram	5,600	3,400	
Total	52,613	50,864	

According to the above statistics the deliveries during November were 661 tons greater than the imports, yet when the advised shipments are added to the actual stocks an increase of over 1700 tons is noted.

Under date of November 26th we have received the following as the result of the auction sale:

578 tons Wallaroo cake, £66⅞@£68½; average £67 16s. 9d.
100 tons Burra cake, 107 " " ingot, highest bid, £65½; withdrawn.
53 Deer Bros.'s " limit, £63 15s.; withdrawn.

Under date of December 2d, we have received the following:

"Nothing was done in Chili bars on Saturday last, the only transactions reported being some which took place on the preceding evening, and consisting of 75 tons favorite marks, at £58¾@£59, cash. On that day (30th ult.) the quotation for G. O. B.'s was £58½, but the price was of a rather nominal character, as holders were indisposed to sell pending arrival of the telegram with news of the charters. The message came to hand this morning and advised 850 tons bars, 50 tons in furnace material for England; 200 tons bars for France.

CHARTERS.

	1878.	1877.	1876.	1875.
Jan. 1 to Nov. 30, tons	44,223	40,092	45,042	44,162
November only, "	4,100	3,338	4,858	4,706

"Prices of bars at Valparaiso on November 30th, $14.90; exchange, 38¼, which, with steamer freight, 60s., is equal to £58⅝, Liverpool, without any commission to merchants either side. Since receipt of the message, £59 has been asked for G. O. B.'s, cash, and we hear of sales of 75 tons good ordinary brand, to arrive, at £59½, and 150 tons favorite mark, at £60, same terms. Wallaroo cake remains at £68@£69, and Burra at £66@£66½."

Tin.—We learn of sales aggregating about 1000 pigs of Straits at 15@15⅛c. During the week the London price declined to £60, but to-day's quotation is up to £62, with a rising tendency, while the Singapore market has suddenly taken the same course. The effect has been to advance this market at the close to 15¾@16c. asked and 15⅝c. bid. L. and F. is quoted at 14⅞@15c., and Refined at 15¼c.

We have received the following from London, bearing date of Dec. 3d:

"The Australian shipments for November are reported as being only 378 tons, but our own message is not yet to hand. The market is somewhat irregular, for although about 40 tons cash metal sold from 63s. to 63⅜s., yet 25 tons, with three months, fixed prompt, were disposed of at 62¾s. net."

Tin Plates.—There is no change in prices, although there has been an improving demand. Contracts for future delivery are a little higher in England. We quote as follows: Charcoal, bright, ⅛X., Melyn grade, $5.87½@$6, and Allaway grade, $5.75@$5.87½; charcoal ternes, Allaway grade, $5.25@$5.37½; coke, bright, B. V. grade, $5.12½, and roofing, 14×20, $4.70.

Messrs. Robt. Crooks & Co., of Liverpool, under date of November 26th, say of tin and terne plates:

"Charcoals do not show any change for the better yet, but as coke tins continue to harden in price, and makers are fully booked for more than a month—some even being partly booked as far as February—it seems probably they may be influenced favorably before long. It is in coke tins that business is being principally transacted, and though we quote 15s. for B. V. grade, some makers of this quality are only quoting 15s. 6d. to 16s., and that for other than prompt delivery. Ternes are in fair demand, but values show little change, though prices are nominally 3d. higher."

Lead.—There has been a fair business done during the past week, and lead has been sold as high as 4c. We quote at 3·95@4c. The market wears the appearance of holding pretty steadily at these figures for some time.

Spelter and Zinc.—We note a sale of 50 tons, at 4.75c. for a superior brand. Otherwise we learn of nothing of importance, and quote ordinary brands at 4½@4⅝c. Sheet zinc is dull, and quoted at 5½c.

Antimony.—Without important business we quote Hallett's at 11⅝@11¾, and Cookson's at 12c.

THE BULLION MARKET.

New York, Friday Evening, Dec. 13, 1878.

The market for silver has weakened since our last, mainly, we think, on the excitement and distrust in financial circles in England. This tendency may have been increased by the growing probabilities of a settlement of the Afghanistan difficulty without a protracted war, involving very large expenditures with shipments, in part, of silver to the East Indies. We regard the market as rather nominal, at 50⅛d. in London, $1.09⅜ here, and 15 per cent discount in San Francisco.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

Date.	London Pence.	N. Y. Cents.	Date.	London Pence.	N. Y. Cents.
Dec. 7	50¼	109¾	Dec. 11.	50⅛	109⅜
Dec. 9	50	109¼	Dec. 12.	50⅛	109⅜
Dec. 10	50	109¼	Dec. 13.	50⅛	109⅜

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of Dec. 7th:

November	25—Jefferson	Nev.	$1,846.29
"	25—Indian Queen	"	3,620.83
"	29—Independence	"	15,500.00
"	30—Northern Belle	"	6,565.81
"	30—California	"	152,400.45
December	2—Navajo	"	5,600.00
"	3—Leopard	"	5,800.00
"	3—Hillside	"	16,178.00
"	4—Manhattan	"	22,400.00
November	29—Bodie	Cal.	9,622.26
December	1—Standard	"	34,155.00
"	2—Grand Prize	"	28,000.00
November	23—Morton	Idaho	3,294.77
"	23—Buffalo	"	3,408.00
"	27—Black Jack	"	14,572.85
"	27—Clearbrook	"	3,000.00
"	27—Morrison	"	1,000.00

The total shipments of treasure to all parts from San Francisco during the month of November were $2,929,344.05—making a total since January 1st, 1878, of $30,530,958.33.

Subsidiary Coin.—Washington, December 11.—Complaints are made from various sections of the country that Congress has made no provision for the redemption of subsidiary coin. Large amounts have accumulated in certain localities where it has become a burden to the banks and to the people. The Treasury Department is not authorized to redeem this coin, and it is urged that the bill offered by Mr. Stephens last winter shall be passed as a measure of relief. This bill provides that subsidiary coin shall be a legal tender in sums not exceeding $20, and shall be receivable for internal taxes The Treasury up to date has paid out $40,000,000 of this coin. The amount of fractional currency outstanding is about $16,000,000, and it is estimated that at least $12,000,000 of this amount will never be presented for redemption, it having been long ago destroyed by constant use.

The Mexican Dollar in Japan.—YOKOHAMA, November 26.—The persistence of the speculators in "cornering" Mexican dollars so as to affect injuriously Japanese credit has caused an announcement by the government in a foreign newspaper—the Tokio *Times*—of the true amount of paper money in circulation. Formerly this was unfairly represented to be several hundred millions. It is now shown to be about 150,000,000 only, including all the Treasury notes and national bank-notes, of which latter only 24,000,000 were issued. The domestic credit is unimpaired, and there is no purpose of asking a foreign loan.

VERSAILLES, December 9.—The Chamber of Deputies has ratified the Silver Convention with Belgium, Italy, Switzerland, and Greece.

Our Base Coinage.—The total amount issued of base coins up to June 30th, 1878, was about thirteen millions, distributed as follows:

Cents (copper) about	$1,568,000
Cents (nickel) about	2,068,000
Cents (bronze) about	1,699,000
3-cent (nickel)	855,000
2-cent (bronze)	912,000
5-cent (nickel)	5,773,000
Total	$12,875,000

The old copper cents were abolished in 1857, and the copper-nickel cent authorized. This was abolished in 1864, and the present bronze cent substituted. The two-cent bronze was abolished in 1873. In 1871, Congress authorized the redemption of all minor coins presented at the mint in sums of not less than $20. The same act authorized the reissue of all current minor coins to depositors of treasury notes and sight drafts.

Purchase of Silver Bullion.—WASHINGTON, December 11.—Offers for the sale of silver bullion were opened at the Treasury Department to-day, about 400,000 ounces being offered, of which over 300,000 were accepted at prices below the London rate. The offers were principally from New York for delivery at the Philadelphia Mint.

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, Dec. 13, 1878.

Argentiferous Lead (Base Bullion). $35 per ton for lead; $1.12 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

Mr. J. B. Meader, under date of December 7th, 1878, reports the following shipments from Salt Lake:

	Lbs.
Shipments of base bullion for November 1878	2,854,636
" " " for ten months	31,763,570
Total for eleven months	34,618,206
Shipments of lead (Germania refined), in November	None.
Shipments of lead (Germania refined), previous	2,618,869
Ore shipments for November reduced to lead	43,610
Ore shipments for ten months	1,475,810 1,519,420
Total shipments of lead for eleven months	38,756,495
Same time for 1877	59,547,861
Decrease in 1878	11,791,366

The shipments of bullion over the Utah Southern railroad during the month of November amounted to 2,643,079 pounds.

The Leadville (Colorado) Ore Output.—Reports from Leadville, Colo., state that the silver production in that region exceeds the expectations of the most sanguine. New discoveries are reported daily. The product of the leading mines has increased 50 per cent within the past two weeks. Two thousand tons, yielding 20,000 ounces of silver, were delivered last week, and 3000 tons of high grade are awaiting transportation. In this connection we note the incorporation of two distinct transportation companies, organized for the special purpose of transporting ore from the Leadville mines. All the smelting works are reported as running at their full capacity. The low-grade mines are not shipping, but are awaiting the arrival of the railroads and more smelting capacity. Leading ore buyers estimate that the product of the camp for the year 1878 will amount to three million dollars.

FINANCIAL.

New York Stocks.

NEW YORK, Friday Evening, Dec. 13, 1878.

The week under review has been another very active one in the coal stocks at the New York Stock Exchange. There has not, however, been much in the coal trade or the action of the committees on combination, to influence the stocks. Delaware, Lackawanna, and Western R. R. has ranged from 44¼ to 42, closing at 42⅝, with sales of 250,980 shares; Delaware and Hudson Canal has ranged from 35 to 38½, closing at 37⅜, with sales of 14,089 shares. New Jersey Central Railroad has been very active, the sales amounting to 14,459 shares, at 26½@29⅝, closing at 28⅛; 50 shares of Pennsylvania Coal Co. sold at 140.

Morris and Essex stock suddenly declined on Saturday, and continued weak for several days after on rumors that the Delaware, Lackawanna, and Western Railroad Company was about to break its lease with the Morris and Essex Railroad. It was soon discovered, however, that there were no grounds for this, and that the Morris and Essex lease was more likely to break than the Delaware, Lackawanna, and Western Railroad Company.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 13th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	.....	.....	30	.....
St.L.,I.M.& S.R.Co..	100	14	13¾	14	60
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	59	.....
*Penn. Salt Mf'g Co.	50	.....	.....	67	1
*Westm'land C. Co.	50	.....	.....	46	.....
*Buck Mt. Coal Co..	50	.....	.....	38	.....
*Schuyl. Nav. Co...	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	.....	.....	95	.....
†B.&O.RR.Co.2d pf	100	.....	.....	92	.....
" " " com	90	90⅛	89	88	382
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25	.....
†Atlantic Coal Co.	10	.....	.....	75	.....

BONDS.	Prin'l. When Due.	Int'est. When Due.	Hig'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	.....	104	.....
" " " 2d mtge.	1881	M. & S.	106	105½	1,500
N.J.C.,1stmtge.new	1890	F. & A.	.....	114½	.....
" " " 1st mtge.,con	1899	Q.	70¾	68¾	*88,000
" " " convt.	1902	M. & N.	70¼	69¼	*8,000
Lehigh & W. B., con	1899	Q.	53	..	†19,000
Am. Dock & Imp. 7s	.....	J. & J.	.....	45	.....
St.L.I.M.& S..1st mt	1892	F. & A.	.....	109	.....
Ches. & O., 1st mtge	1899	M. & N.	.....	.....	.....
D & H C Co.,1stm.rg	1884	J. & J.	95	94	17,000
" " " " " "	1891	J. & J.	96	95	11,000
" " " " m.loan cp	1894	A. & O.	.....	94	.....
" " " " " rg.	1894	A. & O.	94½	.....	1,000
" " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	99	98¾	2,000
" " " rg.	1898	J. & D.	.....	.....	.....
" " " 2d m. 7s,rg.	1910	M. & S.	116	115	7,000
" " " con.m.6s,rg	1823	J. & D.	111	.....	1,000
" " " 6s cp.	1923	J. & D.	.....	.....	.....
*Pa.RR.,1st m.6s,cp	1880	J. & J.	.....	105	.....
" " g. m., 6s, cp.	1910	J. & J.	....	110	.....
" " " 6s, rg.	1910	A. & O.	.....	110¼	.....
" " con.m.6s,rg.	1905	Q.	101	...	1,000
" " " 6s, cp.	1905	J. & D.	101	....	42,000
" " new loan, 5s	.....	.....	.....	110	10,000
*P.& R. R., 1st m.6s, R. C. 43-44	1880	J. & J.	.....	.....	.....
P. & R. R., 1st m. 6s, R. C. 48-49	1880	J. & J.	.....	.....	.....
P.& R. R.,2d m.7s cp	1893	A. & O.	.....	110	.....
" " " scrip	1882	J. & J.	48½	.....	19,500
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	97½	.....	15,000
" " " 7s. rg.	1911	J. & D.	98	97¾	15,000
" " " cvt.7s,R.C	1893	J. & J.	.....	.....	.....
" " C.& I.Co.,Deb 7s, R. C.	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & Q.	105	.....	100
" " RR., rg. m.	1897	F. & Q.	105¾	.....	1,000
" " cvt. co. G. R.	1894	M. & S.	.....	.....	.....
" " " Gold R. C.	1897	J. & D.	94½	94	1,000
" " con.m.7s,rg.	1911	J. & D.	.....	.....	.....
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.	113½	.....	8,000
*Pa Canal, 6s, cp..	1910	J. & J.	65½	.....	5,000
*Schuyl.Nav.,1st m. 6s. rg.	1897	M. & Q.	.....	80	.....
*Sus.Coal, 6s, rg...	1911	J. & J.	83	.....	10,000
†Balt.&O. RR., 6s..	1880	J. & J.	.....	103	.....
" " " " 6s..	1885	A. & O.	.....	105¼	.....

Total transactions for the week.....$283,100

* Assented. † 9000 assented, selling at from 35@33.

Philadelphia Stocks.

PHILADELPHIA, Friday Evening, Dec. 13, 1878.

The coal stocks have been fairly active during the week—Lehigh Valley R. R. Co. particularly so. The dealings in this stock have aggregated 8348 shares, at a decline from $35 to $32⅞, recovering to-day to $34⅝. This company has declared a dividend of 1 per cent, payable Jan. 15th. The net profits for the fiscal year were $396,000 less than in 1877. Lehigh Coal and Navigation Co. declined from $14⅝ to $13⅞, and reacted to $14⅛@$14⅝ at the close to-day, the total of sales for the week being 4540 shares. The sales of Pennsylvania Railroad aggregate 26,467 shares, ranging from $31⅞ to $31½. Reading has shown but little weakness during the week, declining from $11⅛ on Saturday to $11⅛ on Monday, afterward reacting to $12.

COMPANY MEETINGS.

Date.	Name.	Where Held.	
December 16..	Autocrat Mining Co.	San Francisco.	Annual.
" 16..	Hasson Cons. Mining Co	"	"
" 26..	American Coal Co.	New York	"
" 28..	Colorado Central R. R. Co.	Golden, Col.	"
January 8..	New York Steam Power Co.	New York.	"

Gas Stocks.

NEW YORK, Friday Evening, Dec. 13, 1878.

The market for gas stocks continues in its chronic state of dullness. There is a slight advance in the stock of the Brooklyn Company; but we lower the remainder of the quotations.

The Gasoline Gas Question in Columbus, O.—The controversy on the "Lighting" question in Columbus, O., is still in force. The offer of the Gasoline Company, $13.95 per annum for each of the thousand or more posts in the city, contrasts favorably with that of the Gas Company at $16 per post, with an additional $3 for cleaning. A proposition to give a contract to the Gasoline Company for one year was, however, postponed.

Taxation of the Williamsburg Gas Company's Scrip Certificates.—"The directors of the Williamsburg Gas-Light Company, in January, 1870, and January and July, 1871, authorized the issuing to the stockholders of certificates, amounting to $1,000,000, declaring the holders' interest in the property of the company and promising the payment of interest. The Brooklyn Board of Assessors claimed that this 'scrip dividend' was not a debt, but a part of the company's assets, and therefore subject to taxation. The company obtained a writ of certiorari to have the proceedings of the assessors reviewed by the General Term of the Supreme Court, contending that the certificates represented money expended out of the earnings of the company, which properly belonged to the stockholders as profits. On the other hand, it was argued that the issue of these certificates did not create a debt, and that they might be held to be evidence of the existence of the property to which they referred.

The General Term has just rendered a decision affirming the action of the assessors. The opinion was written by Judge Gilbert, who says that the statute on the subject makes the capital stock of the company liable to taxation at its actual value, together with its surplus profits or reserved funds exceeding 10 per cent of its capital.

Winnemucca (Nevada) is to have a gas company.

The Chicago Gas-Light and Coke Co.—We notice the following published advertisement concerning certain bonds of this company:

"Notice to holders of the registered construction bonds of the Chicago Gas-Light and Coke Company. By a resolution of the Board of Directors of said Company, passed on the 25th day of November, it was ordered that 37 per cent of the aggregate amount of the outstanding bonds of the company are hereby called in and ordered to be paid off, and the same will be redeemed at the office of the company on and after the 1st day of January, 1879, after which date the amount so called in will cease to bear interest."

An Ingenious Self-Lighting Gas-Burner.—Our attention has been called to a self-lighting gas-burner, manufactured by Messrs. Miller & Co., of this city. The principal feature of this invention is the certainty of its action. The gas is unfailingly set aglow the instant it is turned on, and thus waste is avoided. This burner is largely adopted by government, naval, and military departments at Washington, and by a number of large establishments in our cities.

AUCTION SALES.—*Northern Liberties Gas Co.*—240 shares, at from $33½ to $32¾ per share.

Mutual (N. Y.) Gas-Light Co.—25 shares at $56¼ per share.

New York Gas-Light Co.—50 shares at $81½ per share.

Metropolitan Gas-Light Co.—50 shares at 99¾ per share.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	Dividends. Rate per ann.	Dividends. Am. of Last.	Dividends. Date of last.	Quotations Bid.	Quotations As'd.
	$		P. ct.				
Mutual, N. Y.	5,000,000	$100	6	1½	Oct., '78	55	58
" Bonds	90,000	1,000	6	3½	Aug., '78	95	103
N. York "	4,000,000	.....	8	4	May, '78	80	85
Metrop. "	2,500,000	100	10	5	Aug., '78	99	101
" Certfs.	1,000,000	.....	7	3½	" '78	90	95
Harlem "	1,850,000	50	6	3	Feb., '78	26	35
Manhat. "	4,000,000	50	.....‡	5	May '78	145	155
Brooklyn, Bkln.	2,000,000	50	15	5	Apr., '78	119	121
Nassau	1,000,000	25	.....‡	3	July, '78	50	55
" Certfs.	700,000	1,000	7	3½	May, '78	80	85
People's	1,000,000	10	.....‡	3½	Jan., '76	17	25
" Certfs.	300,000	1,000	7	3½	July, '78	75	90
" Bonds	325,000	.....	7	3½	May, '78	90	96½
Metrop. "	1,000,000	100	5	2½	May, '78	50	60
W'msb'g "	1,000,000	50	8	1½	July, '78	65	75
" Certfs.	1,000,000	.....	7	3½	July, '78	85	90
Citizens'	1,200,000	20	....‡	3	July, '78	50	60
" Certfs.	320,000	1,000	7	3½	Apr '78	90	95
J. C., N. J.	750,000	20	10	7½	July, '78	120	140
Municipal, N. Y.	466,000	50	.....	.....	.....	76	85
" Bonds	750,000	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share.

NAME OF COMPANY.	Capital Stock.	SHARES. No.	SHARES. Par Val.	Last Dividend. Mo.	Y.	A't.	Rate per Ann.	Dec. 7. H.	Dec. 7. L.	Dec. 9. H.	Dec. 9. L.	Dec. 10. H.	Dec. 10. L.	Dec. 11. H.	Dec. 11. L.	Dec. 12. H.	Dec. 12. L.	Dec. 13. H.	Dec. 13. L.	SALES
	$		$				Per c'nt													
Consol. Coal.	10,250,000	102,500	100	Jan.	77	2½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & H. C..	20,000,000	200,000	100	Aug	78	4	9	35	34⅜	35¼	34⅜	35⅝	35⅛	38⅛	36	37⅜	37	37⅛	36⅜	14,089
D., L.& W. RR	26,200,000	524,000	50	July	78	2½	5	44¼	42	43⅜	41⅜	42⅝	42	43⅜	42⅛	43⅜	42⅛	42⅞	42¼	250,98
Lehigh C.& N	10,448,550	208,971	50	Nov	76	1½	5½	14⅝	14⅛	14⅜	14	14¼	13⅞	14⅛	14⅜	14⅜	14⅛	14⅜	14⅛	4,540
Leh. V'y R. R	27,228,855	540,858	50	July	78	1	.....	35	34¾	34⅜	33	33¾	32⅞	34¼	34	34½	34½	34⅜	.....	8,348
Maryl'd Coal	4,400,000	44,000	100	Jan.	76	1½	1½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. J. C. R. R.	20,600,000	206,000	100	Apr	76	2½	2½	27⅛	26¾	27	26⅝	28	27	29⅝	28¼	29⅝	28⅛	29	28⅛	14,459
Penn. Coal...	5,000,000	100,000	50	May	78	3	.....	140	140	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Penn. R. R...	68,870,200	1,337,404	50	May	77	1½	3	31⅞	31⅝	31¾	31½	31⅝	31½	31⅞	31⅝	31⅝	31¼	31⅝	31⅛	26,437
Ph. & R. R. R	34,278,175	685,563	50	Jan	76	+2½	10	11⅞	11¾	11⅞	11½	11¾	11½	12	11⅜	12⅛	12	12	11⅞	16,631

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497.

Total Sales.....335,504.

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Dec. 11, 1878.

The market still remains quiet and shows no special change, most of the stocks being somewhat firmer than last week, with the exception of the "silvers," which have all fallen off, and look rather weak. There are rumors floating about that the falling off in the production in Chili, and the introduction of the electric light are going to advance the price of ingot copper, and consequently the price of the stocks, and there are many who undoubtedly wish that something of the kind may occur which will help resurrect the stocks, which have so long lain dormant.

Allouez is quiet and unchanged.

Calumet and Hecla is firmer at 176@177, the last sale being at 176¼.

Copper Falls is firm at 1⅛@1¼, with rather an upward tendency.

Franklin is somewhat firmer at 4½@5, and sales at 5.

Osceola sold at 11¾, but is weaker at the close, it being offered at 11½ and 11 bid, but will probably rally again.

Pewabic, no change.

Quincy is being talked up on the street as a good purchase, and we should not be surprised if it proved to be, as it has at present every appearance of it. It closes firm at 11⅞@12.

Ridge is firm, at 1⅛@1¼, and sales at 1⅛.

Duncan has sold down to 4¼, and closes rather weak at 4⅛@4¼. An assessment is expected when the directors have their first meeting.

International is steady at 45@50, and sales at 45@50.

Silver Islet has sold down to 45½, but closes firmer at 47@47½.

November Copper Product.—The Houghton *Mining Gazette*, of the 5th inst., gives the following figures as representing the yield of the reporting mines for November:

	Tons.	Lbs.
Calumet and Hecla	1,283	215
Quincy	275	710
Osceola	158	1,100
Franklin	138	1,070
Atlantic, about	127	....
Allouez Tribute Company	100	635
Pewabic	20	1,660

We are indebted to the same authority for the following notes:

"The returns of copper from the recent trial of rock from the 'Hoar vein,' in the west end of the village, treated lately in the Pewabic dressing-mill, is quite satisfactory, and indicates that the lode carries about 2 per cent of copper.

"Are the stockholders of the Madison Mining Company going to allow their property to go for the judgment obtained against it? Something less than $6000 will pay the claim, leaving them in possession of about 2000 acres of wood land, that is worth at least $20,000, to say nothing of the mineral rights of the estate.

"It is reported that the Franklin mine will soon introduce the same system of mining underground in 'sinking' which is so successfully used in driving the Sutro and other famous tunnels. It is claimed that it will result in a considerable saving of money and time."

Gold and Silver Stocks.

NEW YORK, Friday Evening, Dec. 13, 1878.

Mining investments have not, perhaps, ever attracted so much attention in the East as they are doing at present. It is to be regretted, however, that the Mining Exchange does not offer a better market for mining stocks. Nearly all the business is done by private banking houses. Should the effort being made to have mining stocks called at the New York Stock Exchange prove a success, a great impetus will be given to the dealings in these investments. There is at present a very respectable list of first-class mines organized under the laws of New York, which have no representation upon any Exchange, and will not be classed with American Flag, Bertha and Edith, Gold Placer, and that class of stocks, so long as there is any possibility of a better place of representation. There are also several mines upon the present list of the Mining Exchange that could be included in the list of the new Exchange.

The number of shares of stock sold at the Mining Exchange this week shows a large increase over the preceding one. This, however, is accounted for by sales of Bertha and Edith amounting to more than the sales of all the stocks last week.

The San Francisco stocks have been very liberally dealt in at our Exchange. We note the following transactions: Bodie, 20 shares, at 14½@$13¾; California, 445, at $10@$11¾; Consolidated Virginia, 1235, at $7½@8¾; Gould and Curry, 50, at $7; Grand Prize, 15, at $10; Independence, 1630, at $1.30@$1.50; Hussey, 200, at 35@38c.; Kossuth, 810, at 35@40c.; Leviathan, 205, at 60@50c.; Mexican, 5, at $25; Navajo, 800, at 60@50c.; Tuscarora, 1050, at 13@15c.

The Sutro Tunnel, with dealings of 2500 shares, has ranged from $4.87½@$4.12½.

The Governing Committee of the Stock Exchange has passed a resolution permitting this company's shares to be dealt in by dollars and fractions, instead of percentage. This will make the quotations here correspond with those at San Francisco, London, and Paris.

The value of the Sutro Tunnel to the Comstock mines is freely admitted in all reports from the mines; the reports now invariably looking forward to the time when the water can be delivered to the tunnel instead of pumping it up to the surface at the present enormous cost. In fact, the Savage and some other of the deep mines, which have done nothing but pump water and levy assessments for years past, now hope again to see the bottoms of their shafts, but the Sutro Company seems in no particular hurry to help them. The Tunnel Company is an absolute necessity for the Comstock mines, and their value will increase the day it is known they have come to some definite arrangement with the Tunnel Company for settling the claims it will soon prefer against them. The work on the drain in the bottom of the tunnel is progressing favorably.

There has been a fair business in the leading stocks of the regular list. Bobtail records 50 shares at $2.40. The President and Secretary of this company have paid a visit to the mine, and better returns are looked for in the future. There is a general impression that from sundry causes the profits of this mine have not been nearly so large as they should have been. It is said that adjoining mines have been mining and milling the same class of ores at about half the cost of the Bobtail. Hukill has been dealt in to the extent of 600 shares, at $4@$4.15. Moose records sales of 3150 shares, at $4.95@$4.60. Either this mine is selling ridiculously high or else some of the other Colorado mines that are paying dividends are selling ridiculously low. Sales have been made of 300 shares of New York and Colorado at $1.45. Ontario on a business of 430 shares has ranged from $39¼ to $38¾ to $39¼. Plumas has been but lightly dealt in, the sales amounting to but 500 shares, at $3.75@$3.65. Findley has ranged from 69 to 65c., recovering to 68c. to-day, on the announcement of a dividend. King's Mountain records 100 shares, at $1.60. The developments in this mine are reported to be of a very favorable character, and are watched with much interest. At $3, 100 shares of Cleveland were sold.

In the fancies, Bertha and Edith has been the leading card, with sales of 172,700 shares at 8@12c., and a still further advance prophesied. If some of our Congressmen, who are studying the art of making value out of nothing, would spend a few days at the Mining Exchange, they might learn how. American Flag, without any property at all, has sold at 20@22c., the sales amounting to 2800 shares. Buckeye has come forward about every other day at 55@56c., with sales of 1500 shares. Dahlonega has ranged from 17c. to 14c., with sales of 30,100 shares. Gold Placer has been dealt in to the extent of 21,300 shares, at 30@26c. Lacrosse has been fairly active, at 35@33c., with sales amounting to 13,400 shares. Trio was dealt in on Monday to the amount of 1000 shares, at 45c.

The following petition is receiving the signatures of members of the New York Stock Exchange:

To the Governing Committee of the New York Stock Exchange:

The undersigned, members of the Stock Exchange, believing that the time has arrived when the Exchange should recognize the value of the various mining properties of our country, and should afford its members an opportunity to deal in mining stocks without being compelled to join another association, would respectfully ask that, after January 1st, 1879, you would open, in the room now used by the Gold Department, a separate Mining Department of the Stock Exchange, under such rules and regulations as may be deemed proper.

Upon the acknowledgment of the merits of mining stocks for speculation and investment, by the leading patrons of the New York Stock Exchange, largely depends the successful establishment of a permanent interest in mining in the East, and we welcome any movement in this direction.

It is stated to-day that the above petition has received over 400 signatures.

We call attention to the Eagle Gold Mining Co.'s card in our advertising columns. The statements made relative to the past history of this mine are of a very satisfactory nature. In 1865, Herman Credner, Ph.D., made a report for Messrs. Adelberg & Raymond. The *American Journal of Mining*, now the ENGINEERING AND MINING JOURNAL, of December 19th, 1868, gives his description of this mine. He says it is in Stafford County, Va.; that the vein is from 14 inches to 6½ feet thick; that a shaft had been sunk to a depth of 160 feet. He further says: "Operations were suspended at the beginning of the war. Shortly before that time, the mine yielded for every twenty-five dollars in wages thirty (this is probably a misprint, and should have been *thirteen*) ounces of gold; but at other times the average yield has been sixteen ounces of gold for the above outlay in wages.' Messrs. Van Deventer & Patton, No. 6 Wall street, will supply information relative to the mine and the 100,000 shares of stock which is offered for sale at 10c. per share.

The Carbonate mine, of Leadville, Colo., has been capitalized under the title of the Leadville Mining Co., at $2,000,000 in $10 shares, and is offered for subscription at $2, or on the basis of $400,000 for the property. This property is one of the best known of the famous Leadville mines. It was offered in this market some months ago at a much lower figure, but like some other good things, did not find a purchaser at the lower price. It is estimated that the ore "in sight" is worth $150,000 to $200,000. The mine is in a position to pay dividends, and probably large ones, if honestly managed, though, from the uncertain nature of the Leadville deposits, there is a greater necessity for keeping large reserves of ore in sight than in regular fissure veins. It is said that the stock of this company is finding a very ready market.

Very much attention is being given to Southern gold mines. The *American Exchange* is authority for the following statement:

"We learn from trustworthy sources that eleven of the North Carolina and Georgia gold mines were sold to New York parties during last week, and that contracts are being negotiated for many of the best mining properties in that section, the bonds running thirty, sixty, and ninety days."

In this connection, however, it gives us pleasure to announce the first dividend from any of the Southern mines in which the general public has invested.

The Findley mine is located in Georgia, and is organized under the laws of the State of New York, with a capital stock of $200,000, divided into 200,000 shares of $1 each, 30,000 shares being still in the treasury. The company has two mills, one of 24 stamps and another of 10 stamps. On November 10th the new 10-stamp mill was started, and although the work done during the month of November was in an irregular way, the production of the two mills was $2360, and the working expenses, partially estimated, $525, leaving net earnings of $1835. Upon this showing a dividend of 1 per cent ($1700 on the stock out) was declared. It is expected to earn from 1½ to 2 per cent this month.

A number of the individual enterprises in the South, particularly in Virginia, are reported to be doing very well on the capital invested.

The Homestake mine, which is now attracting general attention in mining circles, has been placed on this market by Messrs. Lounsbery & Haggin, of this city, and has its office at 31 Broad street, and is under the same general management as the Ontario. The Homestake has been developed and put in a dividend-paying condition by Messrs. Haggin and Tevis, of San Francisco, under the supervision of George Hearst, Esq., who is acknowledged to be one of the best practical mining men on the Pacific coast. The mine is situated in Deadwood Mining District, Dakota Territory, and consists of the Homestake and Golden Star mines, 1350 feet long by 450 feet wide on the vein. The company has an 80-stamp mill in operation, and orders have been given for the erection by June next of 120 stamps additional, making a total of 200 stamps which will then be in operation. The amount of ore stated to be at present in sight would, by the judgment of the best experts, seem to assure the regular payment of dividends for a long time to come. The present gross production of the company is about $60,000 per month, and by the addition of the 120 stamps already ordered, will be proportionately increased. Dividends of 30 cents per share will commence in January next, and increase thereafter to 60 cents, and possibly $1 per month.

The Ontario Silver Mining Company, of Utah, since the commencement of operations in September, 1874, has produced 2354 bars of bullion, having a total assay value of $3,956,669, and has paid in dividends to stockholders (including dividend No. 38, payable on the 16th inst.) $1,900,000.

The development of the mine has progressed steadily and systematically, and in the 500-foot level the lode has been uncovered a distance of 1250 feet, showing a continuous vein of ore about 3½ feet in width, and averaging over $200 per ton.

A new shaft has been completed, connecting with the 500-foot level, through which the further development of the property will be prosecuted and greatly facilitated.

The recent loss incurred by the company in the destruction by fire of the old hoisting works, and the

GENERAL MINING STOCKS.

Dividend Paying Mines.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	SHARES. Par Val	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount per share of last.	DIVIDENDS. Total paid to date.	DIVIDENDS. Last Dividend.	DIVIDENDS. Rate p. An	HIGHEST AND LOWEST PRICES PER SHARE IN CURRENCY AT WHICH SALES WERE MADE. Dec. 7. H.	Dec. 7. L.	Dec. 9. H.	Dec. 9. L.	Dec. 10. H.	Dec. 10. L.	Dec. 11. H.	Dec. 11. L.	Dec. 12. H.	Dec. 12. L.	Dec. 13. H.	Dec. 13. L.	SALES.
Alps	Nev.	800	.....	30,000	.....	204,000	Sept. 1878 $1 00	37,500	Apr. 1876 $0 50	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher, G. S.	Nev.	1,040	10,400,000	104,000	100	1,392,200	Oct.. 1878 1 00	15,397,200	Apr. 1876 1 00	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bobtail, G	Col.	2,500	1,136,630	227,326	5	*	.....	56,831	Nov. 1877	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Bobtail Tunnel, G	Col.	.....	100,000	20,000	5	52,000	July 1873 0 30	48,000	June 1873	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie, G	Cal.	.....	5,000,000	50,000	100	25,000	Feb. 1878	650,000	Oct. 1878	2 00	20	.....	.....	.....	.....	14½	13¾	11¾	.....	.....	.....	.....	20
California, G. S.	Nev.	600	54,000,000	540,000	100	.....	.....	29,160,000	Aug. 1878	1 00	24	.....	.....	10⅝	10	.....	.....	11¾	.....	11½	11¼	11½	445
Calumet & Hecla, C	Mch	.....	2,000,000	80,000	25	1,200,000	.....	13,450,000	Aug. 1878	5 00	20	176	.....	.....	.....	.....	.....	.....	.....	177	.....	.....	34
Central, C	Mch	.....	500,000	20,000	25	100,000	June 1862 0 65	1,260,000	Feb. 1878	5 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chollar Potosi, G. S.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept. 1878 5 00	3,040,000	Feb. 1872	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Falls, C	Mch	.....	1,000,000	20,000	50	535,000	May. 1876	100,000	Nov. 1871	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cons. Virginia, G. S.	Nev.	710	54,000,000	540,000	100	474,600	June 1873 3 00	40,500,000	June 1878	1 00	12	7½	....	8¼	7¾	8¼	8	8⅛	8⅛	8¾	8	8¼	8	1,235
Confidence, G. S.	Nev.	130	2,496,000	24,960	100	256,320	Apr. 1878 0 50	78,000	May. 1865	8½	8½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crown Point, G. S.	Nev.	600	10,000,000	100,000	100	1,873,370	Sept. 1878 1 00	11,588,000	Jan.. 1875	2 00	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Daney	Nev.	2,000	.....	108,000	.....	91,800	Nov. 1878 0 20	56,000	July 1863	1 10⅝	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eureka Cons., G. S. L.	Nev.	.....	5,000,000	50,000	100	100,000	..... 1876 1 00	2,950,000	Aug. 1878	3 00	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eureka G. Mg., G	Cal.	1,680	2,000,000	20,000	100	.....	.....	2,149,000	Apr. 1878	0 25	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin, C	Mch	.....	500,000	20,000	25	360,000	June 1876 5 00	585,000	Nov. 1871	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gila	Ariz	.....	.....	100,000	.....	50,000	Apr. 1878 0 25	50,000	Aug. 1875	0 25	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gould &Curry, G. S.	Nev.	612	10,800,000	108,000	100	2,828,000	Nov. 1878 1 50	3,826,800	Oct. 1870	10 00	....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Grand Prize	Nev.	1,500	.....	100,000	.....	100,000	July. 1878 1 00	400,000	Feb. 1878	1 00	....	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	15
Hale & Norcross, G. S.	Nev.	400	11,200,000	112,000	100	2,914,000	Aug 1878 1 00	1,598,000	Apr. 1871	5 00	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hukill, G. S.	Col.	3,288	1,000,000	100,000	10	*	.....	.....	Dec. 1878	0 10	12	.....	.....	4	.....	4.15	4.05	.....	.....	4.10	.....	4.10	4.05	600
Independence	Nev.	1,500	.....	100,000	.....	75,000	Feb.. 1878 15	150,000	Oct.. 1878	25	....	1.35	1.30	1.40	1.35	1.45	1.30	1.45	1.40	1½	.....	1½	1.45	1,630
Kentuck, G. S.	Nev.	95	3,000,000	30,000	100	300,000	Aug. 1878 1 00	1,252,000	Mar. 1870	5 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
K. K. Cons.	Nev.	.....	.....	50,000	.....	250,000	Nov. 1878 1 00	50,000	Sept. 1873	0 25	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leeds	Uth.	3,000	.....	60,000	.....	.....	.....	18,000	Oct.. 1878	0 15	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	175,000	Oct.. 1878 50	162,500	Dec. 1876	0 50	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manhattan	Nev.	.....	.....	50,000	.....	50,000	Oct.. 1878 1 00	400,000	Feb. 1877	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Merrimac, S.	Mas.	1,500	500,000	100,000	5	*	June	120,000	Mar.	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minesota, C	Mch.	.....	1,000,000	20,000	50	436,000	..... 1869 5 00	1,820,000	Mar. 1876	0 50	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Modoc	Cal.	4,000	.....	100,000	.....	400,000	Nov. 1878 0 50	50,000	Dec. 1876	0 50	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moose	Col.	39,000	2,000,000	200,000	10	*	.....	550,600	Mar. 1878	0 25	10	4.95	4.70	4 90	4.55	.....	.....	4.55	4½	4.65	.....	4.60	.....	3,150
National, C	Mch.	.....	500,000	20,000	25	195,000	Oct.. 1875 1 00	360,000	Oct. 1873	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Y. & Colorado, G	Col.	.....	1,000,000	50,000	20	*	.....	20,000	Mar. 1877	0 20	....	.....	.....	.....	.....	1.45	.....	.....	.....	1.45	.....	.....	.....	300
Northern Belle, S	Nev.	1,600	5,000,000	50,000	100	.....	.....	1,425,000	Feb. 1878	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario	Uth.	3,000	10,000,000	100,000	100	.....	.....	1,900,000	Dec. 1878	50	12	39	.....	39¼	39	39¼	.....	39	.....	38¾	.....	39¼	.....	420
Ophir, G. S.	Nev.	675	10,080,000	100,800	100	3,436,800	Nov. 1878 1 00	1,394,400	Mar. 1864	4 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pewabic, C	Mch.	.....	500,000	20,000	25	185,000	June 1868 3 00	460,000	July 1873	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phœnix, C	Mch.	.....	1,000,000	20,000	50	817,500	Sept. 1870 3 00	10,000	Dec. 1876	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plumas	Cal.	.....	1,000,000	100,000	10	.....	.....	100,000	Dec . 1878	10	....	3.70	.....	.....	.....	3.75	3.70	.....	.....	3.65	.....	.....	.....	500
Polar Star, G. S.	Col.	1,300	500,000	50,000	10	*	.....	5,000	Jan. 1878	0 10	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy, C	Mch.	.....	200,000	20,000	10	.....	.....	2,230,000	Feb. 1878	5 00	....	.....	.....	.....	.....	.....	.....	.....	.....	12	.....	.....	.....	25
Raymond & Ely, G. S.	Nev.	5,000	3,000,000	30,000	100	630,000	Oct.. 1878 1 00	3,075,000	Sept. 1873	3 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ridge, C	Mch.	.....	500,000	20,000	25	200,000	.....	90,000	Feb. 1875	1 00	....	1½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Rye Patch	Nev.	1,600	.....	30,000	.....	97,500	Nov. 1876 0 50	105,000	Dec. 1877	0 25	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph, L	Mo.	2,000 acs.	1,000,000	100,000	10	.....	.....	250,000	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savage, G. S.	Nev.	800	11,200,000	112,000	100	3,972,500	Sept. 1878 1 00	4,460,000	June 1869	3 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Seaton, G. S.	Col.	1,700	500,000	50,000	10	*	.....	.....	May 1877	0 10	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nevada, G. S.	Nev.	3,650	10,000,000	100,000	100	2,350,000	Oct.. 1878 3 00	102,000	Jan. 1871	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Islet	Mch	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	50	.....	50	46	.....	.....	47	.....	46	.....	.....	.....	181
Silver King	.....	.....	.....	.....	.....	.....	.....	450,000	Nov. 1878	0 50	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard	Cal.	.....	.....	50,000	.....	50,000	July 1878 1 00	700,000	Oct.. 1878	1 00	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120,000	100	3,798,000	Sept. 1878 1 00	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McClinton	Cal..	1,000	.....	50,000	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

consequent injury to the pumping machinery, occasioned a temporary cessation of the operations of the mine and mill; but the necessary repairs are nearly completed.

A new furnace is also in process of erection and nearly finished, by which the monthly production of the company will be largely increased, if not doubled.

The mill started on 2d inst., since which time the company has resumed its usual daily bullion shipments.

The production of the Ontario Silver Mining Company's mill from December 4th to 7th was 23 bars, having an assay value of $16,353.86.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS						Opening.
	Dec. 6.	Dec. 7.	Dec. 9.	Dec. 10.	Dec. 11.	Dec. 12	Dec. 13.
Alpha	8 1/4	9 3/4	9	9 1/2	9 1/4	9 5/8	9 1/2
Alta	5 3/8	5 3/4	6 3/4	7	5 7/8	6 1/4	6
Argenta							
Bechtel		1/2	3/4	3/4		3/4	
Belcher	4 1/4	4 1/2	4 3/8	4 3/8	4 3/8	4 1/4	4 1/4
Belle Isle							
Benton							
Best & Bel.	17 1/2	18 1/2	19	18 3/8	19 1/4	18 3/8	18 1/2
BlackHawk							
Bodie	12 3/4	14	12 1/2	14 3/4	13	13 3/4	
Booker							
Bullion	4 3/8	5 1/8	5	5 3/8	5 3/8	5 1/8	5
Bulwer							
Caledonia	2	2 1/8	2 1/4	2 1/4	2 1/8	2 3/8	2 1/2
California	9 1/4	9 3/8	10 7/8	11	10 3/4	10 3/4	10 3/4
Challar-Pot	35	38 1/2	40	40	40	37	38
Confidence	5	5	5	9	8	8 1/4	
Con. Imp							70c
Con. Va	7	7 1/8	7 1/2	8 1/4	8	7 3/8	7 3/4
Crown P'int	4	4 3/4	4 3/8	5	4 3/4	4 3/8	4 1/2
Endowm'nt							
Eureka Con	35	34 1/2	35 1/2	35 1/4	37	36 1/8	
Exchequer	3 1/2	4	4	3 7/8	4	4	
Goodshaw							
Gould &Cur	7 3/4	8 5/8	8 1/2	8 1/2	8 3/4	8	8 1/2
Grand Prize	8 1/4	8 7/8	8 5/8	8 1/2	8 1/2	8 3/8	
Hale & Nor.	10 3/8	12	11 1/2	11 1/2	11 3/4	11 1/8	11
Hamburg							
Homestake		15	15	15	15	16	
Hussey		40	40	40	40	40	
Indep'd'nce		1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	
Jackson							
Julia Con	2 5/8	3	3 3/8	4 1/4	4 1/4	3 7/8	4
Justice	4	4 1/4	4	4 1/8	4 1/2	4 1/8	4 1/2
Kentuck	4	4	4	4 1/8	4 1/8	4	4
Kossuth		40	1/4	1/4	15	15	
Leopard		1	1	1	1	1	
Leviathan		1/8	1/8	1/8	1/8	1/8	
Manhattan							
McClinton							
MeadowVal							
Mexican	22	24 3/4	26	27	28 3/4	27 1/4	28
Mono							
Navajo		40	41	40	40	40c	
North. Belle	9 5/8	9 1/2	9 3/4	9 7/8		9 3/4	
Ophir	34 1/8	36	38	40 1/4	41 1/2	41	41 3/4
Orig. K'ys'e							
Overman	9 1/2	10 5/8	10 3/8	10 3/8	10 1/2	10 1/4	10
P. Sheridan					1/2	1/2	
Ray. & Ely	8 3/4	7 3/4	7 3/4	8 1/2	9 1/2	10 3/4	
Richer							
Savage	9 3/8	10 3/4	10 1/4	10 1/2	9 1/2	9 5/8	9 1/2
Scorpion							
Seg.Belcher							19
Sierra Nev.	39 3/4	45	46 1/4	48	50 1/2	49 3/4	49 1/2
Silver Hill	1 1/4	1 1/4	1 1/4	1 1/2	1 3/8	1 1/2	1 1/4
Silver King							
Summit							
Tioga					1 1/4	1 1/2	
Tip Top					1 1/2	1 1/2	
Union Con.	40	45 3/4	48 1/2	55	61	59	60
Utah							14 3/4
Ward							
WashoeCon							
Wells Fargo							
Yel. Jacket.	12	14 7/8	14	14 1/4	14	14 1/2	14

REVIEW OF THE SAN FRANCISCO MARKET.

A decidedly better feeling is manifested in the San Francisco quotations, and with but a single exception the list has advanced; while the market does not open to-day at the very best prices of the week, yet a firm feeling is evident, and many of the quotations are at their highest, some of the stocks showing advances equal to 20 per cent on the market price of a week ago; indeed, barring all stock manipulation, the outlook for many of the mines in our list is full of promise, and, with the elimination of the ring-jobbing element, some of these might be a good purchase at present.

Alta opens to-day at an advance of $1 per share. The north drift on the 1550-ft. level of this mine is reported as developing fine ore prospects, and the company is taking out ore. We have no quotations of Argenta; the stock is selling in San Francisco at about $2.75 per share. It is anticipated to soon begin hoisting ore from this mine.

Bechtel shows some improvement. Belcher is steady. It is stated that the face of Cross-cut No. 3, on the 2360 level of this mine, is in a favorable character of quartz. Benton is selling quite freely in San Francisco, at $3@$3.50 per share. Best and Belcher shows considerable improvement. Sinking the new joint (Obiston) shaft is now progressing favorably; it has now attained a depth of about 350 feet. Bulwer is selling in San Francisco at about $16 per share. This company has begun milling ore, and it is anticipated that from the proceeds of this it will soon be in position to pay a dividend.

Bullion is a little better. The west cross-cut on the 2000-foot level of this mine is steadily advancing in favorable vein matter. Bodie shows some improvement on our last, but considerable decline on the best price of the week. As anticipated, this mine has announced a dividend of $1. The mill is running steadily, and the company making regular bullion shipments. We are without any quotation of Belle Isle. The stock is selling in San Francisco at 40c. per share. Caledonia is better; the water in this mine is decreasing; sinking joint shaft progressing favorably. The old bonanzas have materially improved, and one of them, the California, declared a $1 dividend, which is certainly a satisfactory amount on the present selling price of the stock. The November output of this mine amounted to $472,000. The mine is yielding at present about 350 tons of ore per day. Operations in this and the Consolidated Virginia mine are progressing very satisfactorily.

In the bonanza suits brought by Burke and others, stockholders in the California and Consolidated Virginia mines, for an accounting for $35,000,000, J. C. Flood and others, comprising the Bonanza firm, pleaded in San Francisco, on the 11th inst., the statute of limitations.

Consolidated Imperial opens to-day at 70c., the only quotation of the week. The joint Alpha winze was advanced 111 feet on the slope below the 2400 level. The bottom of the south incline is in favorable ore, giving low assays. Challar-Potosi sustains the general advance, though the mine is considerably troubled with water, the flow amounting to from 80,000 to 90,000 gallons per day. Operations in the Crown Point mine are of a favorable nature. The stock opens at $4½, against $4 last week. Exchequer is fairly maintained. It is given out that a ring manipulation in the stock of this mine is on foot. We have no price of Eureka Consolidated to-day; it closed last night, however, at $36½, against $37 the day previous, which was the highest price for some time past. The furnaces at this mine are reducing 1560 tons of ore per week and producing 355 tons of bullion. The ore-bodies in the several levels are yielding their usual quota of ore and still seem fully as strong as ever.

Gould and Curry fully sustains the general advance. We note no particular change in this mine's prospects. Grand Prize is very steady, and making satisfactory bullion shipments. It is anticipated to soon drain this mine of water. The ore being extracted is very rich and the mill steadily running. Hale and Norcross sustains the general advance. This company has levied an assessment of 50c. per share.

The Virginia City *Enterprise* says that the water was 49 feet above the 2100 level of the Hale and Norcross; pumps are wearing the water down, but they will probably not resume work on the 2100-level until connection has been made with Requa shaft, which is early expected, as, according to measurement, the large drift which is to connect with the Requa shaft is in 500 feet, leaving 400 to go, which they calculate will be completed on the 1st of January, after which they will pump the water 400 feet, which will bring it up to the drift leading into the Sutro Tunnel. When this plan of working goes into operation, the long drowned lower levels of the Savage and Hale and Norcross mines will be drained.

Julia is decidedly better. The south lateral drift on the 2000 level of this mine is advancing at the rate of 5 feet per day. It is now in soft vein porphyry, carrying spots of ore of a very favorable character. There are no indications of water, and the great heat is gradually decreasing.

Justice is producing 50 tons of ore per day, and work is being vigorously prosecuted in all parts of the mine. The Martin White Mining Co. is producing at the rate of $150,000 per month. This stock is selling in San Francisco at $8.50 per share. Manhattan is producing steadily, and the stock selling at $4 per share. Mexican shows a marked advance, opening to-day at $28, against $23 last week.

Sinking the joint Union Consolidated winze is making good progress, the rock in the bottom being much softer. It is now down 98 feet on the slope below the 1600 level. The hoisting facilities have been increased, so that more work can be done, and the sinking crowded more rapidly. At the annual meeting of this company on the 3d inst., the following statement was submitted:

RECEIPTS.

Cash on hand at the date of last report, December 4th, 1877	$8,425.76
Cash in hands of the superintendent December 4th, 1877	390.95
Assessment No. 5	50,400.00
Union Consolidated S. M. Co., labor on joint work	12,655,00
Ophir S. M. Co., labor on joint work	1,711.00
Bank of California—present overdraft	7,460.22
Total	$81,052.94

EXPENDITURES.

Wages and salaries at the mine	$44,572.50
Supplies and miscellaneous expenses	18,232.81
Legal expenses	9,350.00
Surveying	100.00
Office expenses at San Francisco	7,749.50
Assessment expenses	287.50
Interest and exchange	627.38
Cash on hand in office	65.31
Cash in hands of superintendent	67.94
Total	$81,052.94

Hamburg is selling in San Francisco, at $1.50 per share. This company is now shipping bullion at the rate of $50,000 per month, and is reducing about 50 tons of ore per day. Homestake closed at $16 yesterday, which is an advance on the previous prices of the week. Independence is unchanged. The company is making regular shipments, and a strike of carbonate ore in the mine is reported. The company are erecting hoisting works. A meeting of stockholders representing this mine was held here yesterday, with the object of taking some action regarding the recent management of the property.

It is thought that the majority of the stock is owned here, but nothing can be done until it is transferred to the owners' names, the majority being held in the names of trustees. It is requested that shareholders communicate with the committee so that a concentration of effort may be made to demand investigation of a management which paralyzes the productive power of a mine when it is apparently amply able to continue yielding returns to its stockholders, and when, according to its superintendent, "It is looking as well as ever."

Navajo is unchanged; the company is making regular shipments.

Northern Belle is steady; the company is now shipping about $40,000 per month. Ophir shows the most prominent advance in the list, opening to-day at $41¾, against $35 a week ago.

Stoping ore has been commenced on the 1900 level of this mine, at which point the opening in the Hardy vein shows finely, the average assay of car samples ranging from $300 to $350 per ton. On the 2000 level a drift has been started on the ore vein, the car samples from which assay $200 to $250 per ton. The main north drift, on the 2000 level is steadily advancing, the face in soft, broken-up porphyry, and vein matter of a kind and favorable character. It is now in 420 feet. The drift is very large, and is being run direct for the North Consolidated Virginia shaft.

Raymond & Ely stock shows a decided advance, closing last night at $10.75, against $9 last week. The prospects of the mine are very flattering. The new bonanza, Sierra Nevada, has advanced $10 since our last. The *Graphic* dispatches of the 7th and 11th say:

"VIRGINIA CITY, Nev., December 7.—The north cross-cut in the Sierra Nevada mine, 2200-foot level, shows fourteen feet of ore. The average assays yield $80 to the ton. The face of the cross-cut is in poor ore and porphyry. The incline is down forty-six feet below the 2200-foot level. The bottom shows rich ore.

"December 11th.—Since yesterday they have been finding very rich ore at the bottom of the Sierra Nevada incline."

Union Consolidated shows even a more marked advance than that of its contemporary, opening to-day at $60, against $40 last week, an appreciation of 33⅓ per cent. Regarding the settlement of the recent controversy between these companies, we note:

"On November 27th was filed for record a deed from the Sierra Nevada to the Union Consolidated, by the terms of which the latter deeds to the former all that portion of the claim mentioned in the United States patent to the Union Consolidated, commencing from the north line and thence running southerly for a distance of 250 feet. The Sierra Nevada grants thirty-five feet of its claim to the Union Consolidated; also all the ground claimed by the latter, south of the 250 feet already mentioned. The consideration was merely nominal, $5."

The amount of mining dividends paid in San Francisco last month was $494,700, against $2,954,300 in November, 1877.

The Bodie Mining Co. has declared a dividend of $1 per share.

ASSESSMENTS, with dates when delinquent: Colorado River, 50c., January 21st; Summit, 50c., January 6th; Belmont, 50c., January 3d; Bullion, $1, January 7th; Queen Bee, 25c.; Utah, $2; Alta, $1; Hale and Norcross, 50c.; Savage, $1; South Bulwer, 10c.